

DESIGN MANUAL

A GUIDE TO DESIGN PINK TOILET

PINK TOILET: A GUIDE MANUAL

ACKNOWLEDGEMENT

“Presentation inspiration and motivation have always played a key role in the success of any project.”

We are extremely grateful to PVR Nest, the Center for youth, and SDMC for considering us worthy of this opportunity.

We would like to pay special regard to our Dean Mrs. Usha Patel and the Director of IIAD Mr. Jitin Chaddha to encourage us to the highest peak and provide us the opportunity to work on this project. We would like to express our gratitude to our faculty Mr. Snehanishu Mukherji, Mrs. Rashim Mahajan, and Mr. Hitesh Kumar for bringing this opportunity to us and giving us invaluable lessons and guidance. We would also like to express our thanks to Mrs. Kanika Arora, Mrs. Anshoo Rajvanshi, and Ms. Aarti Uberoi for supporting and guiding us, all of which will be carried forward.

We would also like to acknowledge our peers for their encouragement and support throughout the project.

Thank you.

STAKEHOLDERS

South Delhi Municipal Corporation

South Delhi Municipal Corporation is one of the municipal corporations in Delhi, India created after the former Municipal Corporation of Delhi was trifurcated in 2012. SDMC has introduced aspirational features in the public toilets which come under best category toilets. Another best intervention by SDMC is the introduction of Pink Toilets exclusively for ladies with all necessary parameters and well maintained by all female staff. The toilets are easily accessible as well as located on google maps for the public.



PVR Nest (Network for Enablement & Social Transformation)



It was founded in 2006, as a social arm of PVR Ltd, that envisions sustainable, liveable cities with safe multi-utility spaces that empower women & children.

PVR NEST's core philosophy is to develop and promote public-private partnerships that work on urban sustainability issues and to create a safe environment for all sections of the society. The trust believes in educating, empowering and building a collaborative society by extending ongoing support to the vulnerable sections of the society via its various programs.

The programs of PVR NEST are aimed to provide sustainable solutions to the most fundamental problems such as safety, health, education, and workforce participation, faced by the underprivileged.

Centre For Youth

Center for Youth is a self-sustaining and not-for-profit organization working for the welfare of the rural and urban youth. C4Y facilitates the participation and civic engagement of youth at all levels of governance by providing them sustainable avenues and the right platforms to further their growth and encourage their participation for social and financial inclusion. Since its inception in 2014, C4Y has conducted several innovative programmes, including Corporate Social Responsibilities (CSR) programmes. The organization has undertaken several outreach, awareness and behavioral change communication programmes pan India.



IIAD (Indian Institute of Art and Design)



IIAD was established in 2015 as an independent design school in New Delhi. Their partnership with Kingston School of Art gives IIAD students the distinct advantage of world-class education and a globally-recognised degree from Kingston University, London. The Institute is passionate about bringing future-relevant design education to India, and what design can do for the world when merged with the arts, technology and the industry.

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INTRODUCTION



The outcome of this project is to enhance and redesign existing Pink Toilets in different parts of Delhi NCR to make them more functional and efficient. To be able to achieve this, two sites have been selected to test as prototypes which would generate the principles of redesign for all the Pink Toilets. This would be explained through a Design Handbook to be produced as the final outcome of this project.

PUBLIC TOILETS

A public toilet is a room or small building with one or more toilets (and maybe also urinals) that is open to the general public or the floating population, that is, people who are on the move. They cater to the requirements of everybody traveling through, whether a resident or a stranger. Commonly seen at places like markets, train stations, tourist attractions, near office buildings, and other public areas where a large number of people pass by, these public toilets are often maintained by the government. In addition, the public toilets are staffed (perhaps with a separate room) by a janitor or attendant.

The Indian public toilet system has been subject to a lot of criticism. Even the cinema has played its part in highlighting its sorry state of affairs and the people's plight, especially in the rural and semi-urban areas. The public toilet in India are not properly maintained, are unhygienic, sanitary pads not available and are not socially inclusive.

While the state of the public toilets are same for both men and women, it is distinctly unsafe for the women due to the physical contact required while using the facilities. Every person has a right to proper sanitation and thus it is essential to provide clean and safe public toilets. It should also be noted that there are a fewer number of women centric public toilets at the moment that provide proper menstrual hygiene facilities and cater to the needs of young girls, mother and differently-abled.

Even though public toilets are available and are located in almost all crowded areas, they are not easily accessible. A lot of initiatives have taken place in order to improve the state of the public toilets where the ultimate goal is to create a washroom which caters to the needs and wants of the user.

NEED FOR WOMEN CENTRIC TOILETS

- When a woman gets access to a washroom, it helps break the age-old stereotypes and discrimination cycle.
- The physiological disposition of women along with their bodily functions make them more prone to infections especially during the menstrual cycle, pregnancy and menopause.
- They need a safe and private zone as they are more prone to harassment and sexual assault considering using a toilet is a vulnerable activity.
- They might also have a responsibility towards those who might need assistance using a washroom (the elderly, handicapped persons and children). Therefore it is important to have a separate toilet for them
- It also gives them the right to expression, employment, representation and sanitation which will empower them.

PINK TOILETS

As stated by the Plan India organization, "Pink Toilets is a Public-Private collaboration between Plan India, PVR NEST and Municipal Corporation of Delhi to increase women's physical and economic mobility by creating safe and gender friendly public spaces, thereby increasing their participation in school, work, and public life."

Going to the toilet is a basic human need. However, many people, in particular specifically women and girls, continue to suffer disproportionately from inadequate sanitation, and often cannot use a toilet when and where they need. Therefore, the aim is to create a female-friendly public toilet facility that is both comfortable and secure, including universal access to sanitation and emphasis to address in particular the needs of women and girls.

APPROACH

In order to achieve the goal, the first step is to identify the social, physiological, and emotional needs of the users for whom the space is being designed. Interviews with attendants and users of public restrooms, as well as online questionnaires, were conducted as a part of primary research to gain a better understanding of their perspectives.

Qualitative study was conducted to better understand user behavior and to gain a better grasp of the problem and the factors that contributed to it. In later phases of the design process, qualitative research becomes a helpful complement for example, looking into potential solutions for existing problems to make it more efficient and user friendly. Studying current literature and other Internet sources has been quite useful in verifying certain insights gained from primary research as well as the guidelines regarding provision of facilities in a public restroom.



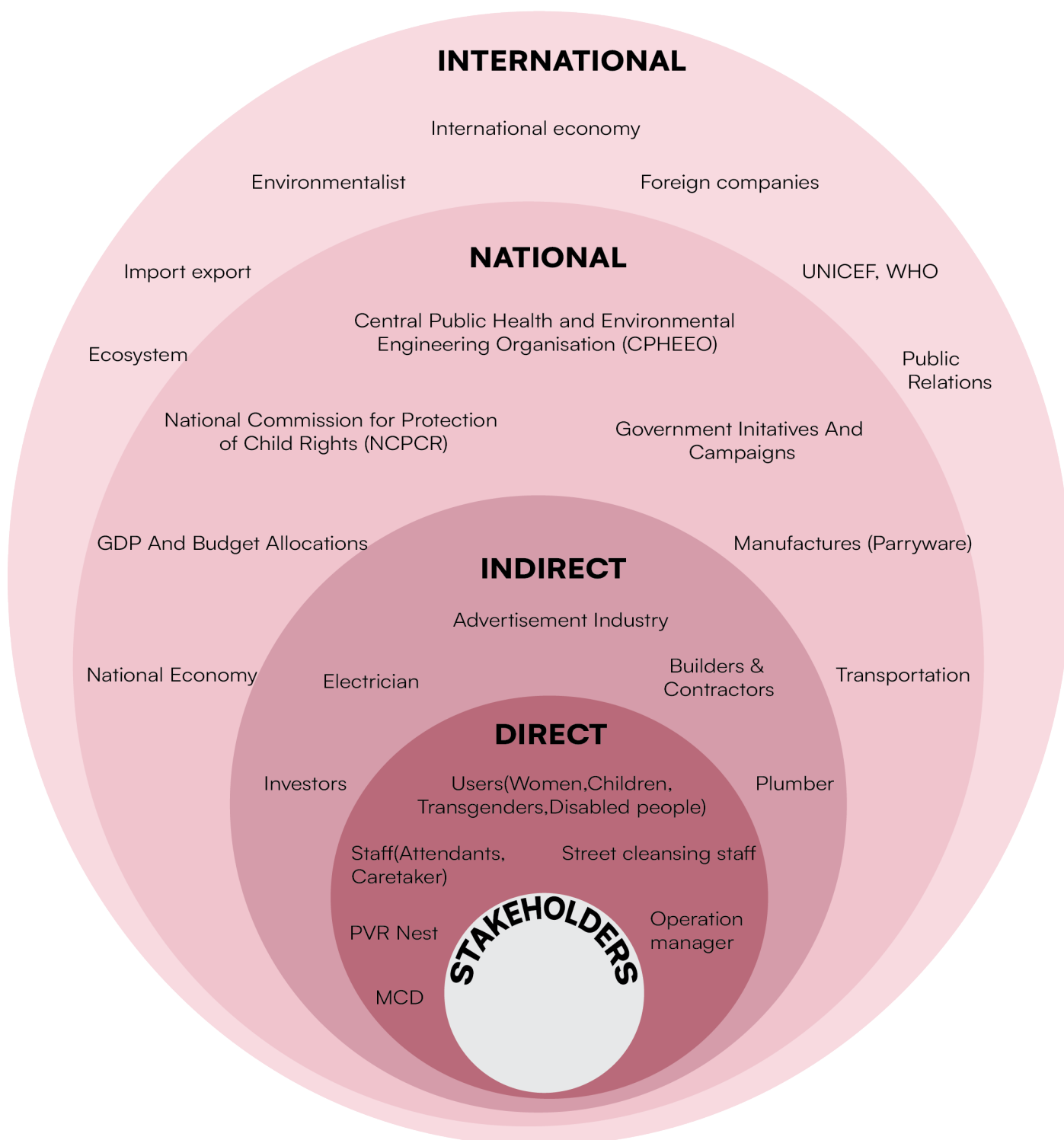
USER GROUP

The target user group of the Pink Toilet are cis and trans women from all demographics and all stratas of socety, children and the differently-abled use the toilet, children and the disabled people. These toilets are more socially-inclusive and accepting.

The pink toilets are equipped with adequate lighting,

running water; door-locks and are well-maintained thanks to the caretakers, who have been instructed to keep a check on every toilet seat after each use.

So, All-in-all pink toilets aim to provide all-inclusive facilities to women's sanitation practices.



“India has made rapid progress in ending open defecation across the Country. The number of people defecating in open in India has reduced significantly by an estimated 450 million people. However, we all need to ensure sustained use of toilets and hygiene practices by all, at all times.”

RESEARCH AND CASE STUDY



Considering all the guidelines, by laws and the research conducted; The design implementation has been done on two already existing sites i.e the pink toilet in Saket and Vasant Vihar. We talk about the immediate surrounding and its context, Facilities available and its service plans.

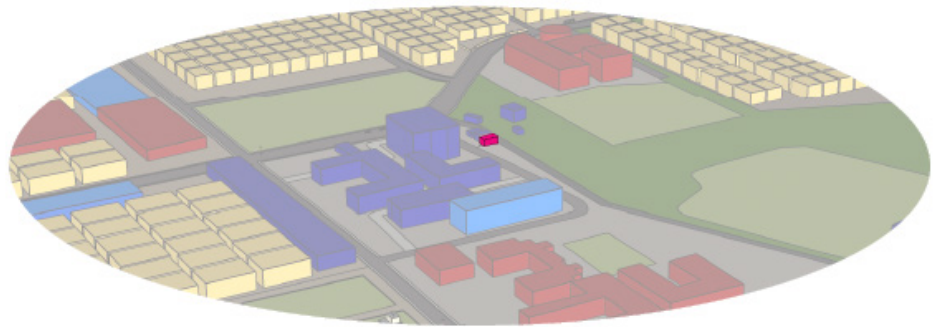
CASE STUDY: SAKET

About

The site is an existing Pink Toilet in Saket, New Delhi. It covers an approximate area of 600sqft and the entrance faces towards the north direction. The site is covered in mosaic tiles on the exteriors and has ramps one for the entrance and the other for the disabled washroom. It has a courtyard-style typology which makes it different from the other Pink Toilets. The site also has heavy foot traffic during most hours of the day due to its location. The site has a sewer behind it, garbage disposal center on the left side and slums on right which bring the majority of users.

Location

Talking about the context within the 200m radius; The site is very close to Malviya Nagar metro station as well as Saket G block bus stop and Anupam cinema bus stop. The site is also considered a prime location because of the large number of parks and schools available. The site is connected through the Press Enclave marg, Mehrauli Badarpur road, Saket mandir road, etc. There is also a police station, Anupam market and temples around the area.



Wayfinding



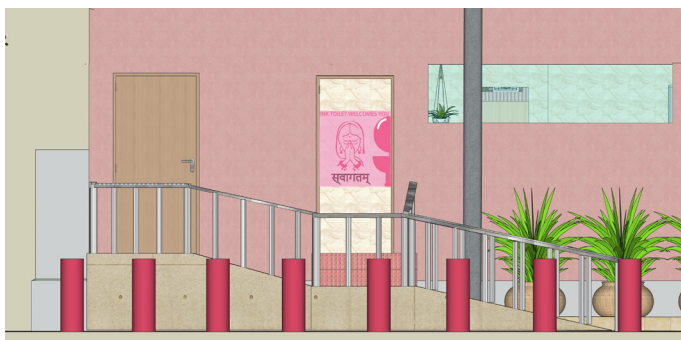
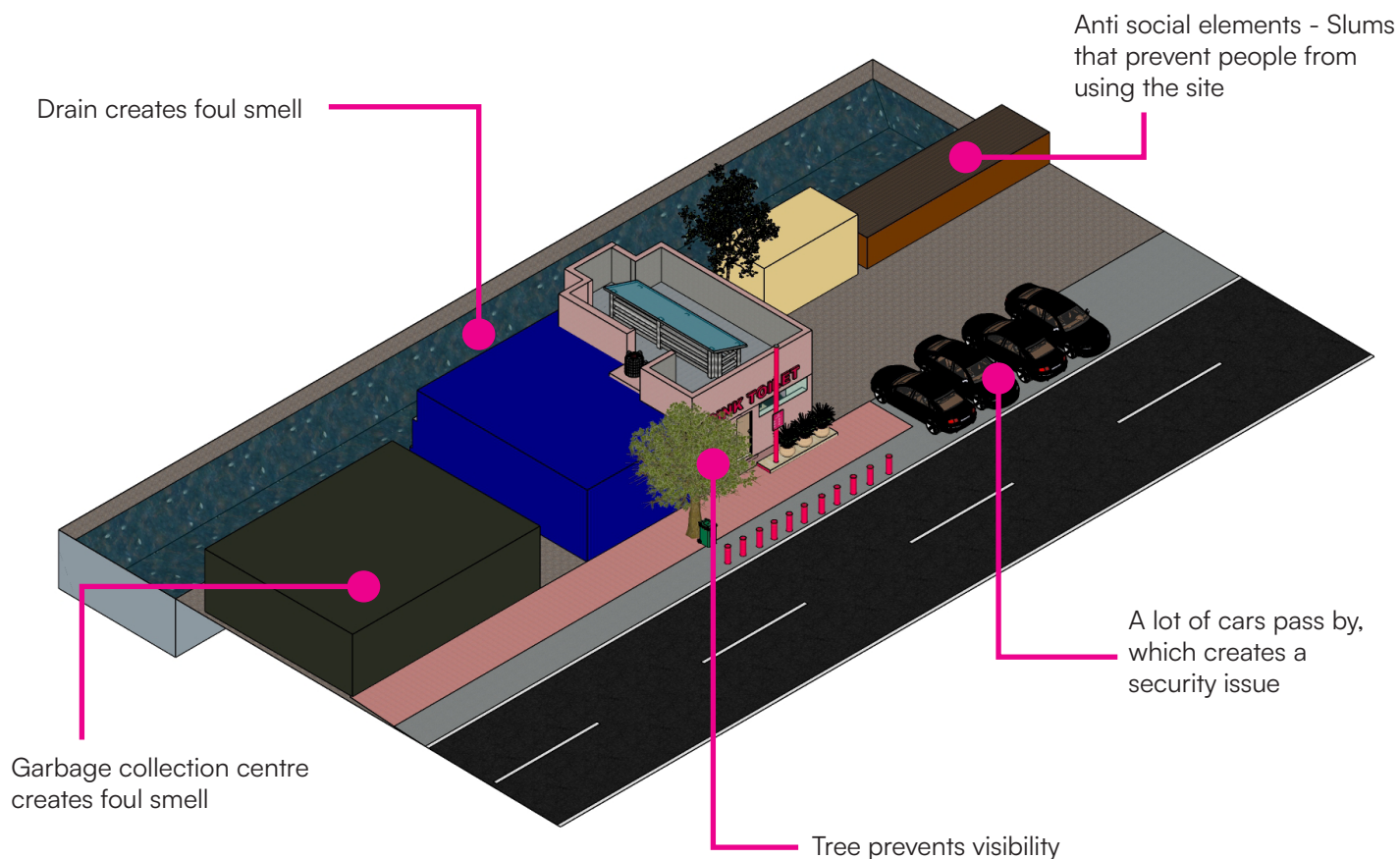
- The signage that would be put around the pink toilet site contains a woman which represents that it is a women's toilet with the universal signs for the facilities available like toilet for the disabled, baby care area, etc.
- There would also be signage posters in various locations, such as pole signage and stickers on the footpath, to indicate the direction to the pink toilet. In this case, there are boards already placed on electric poles that help locate the Anupam cinema which will be used for our site as well.
- Outside the toilet, in the immediate surrounding, some posters representing various information and the toilet route will be posted.
- Direction stickers to the site have been put on the floor of prime areas like bus stops to make the wayfinding more impactful
- There are branding options for the pink toilet's exterior walls, taking into account an increase in footfall in the future. where there is typography with the logo, for it to become eye catching even from a distance, the surrounding area has poles, which indicate the users who can use the toilet, with some posters which explain the facilities that are available with QR codes to record feedback.



Immediate Surroundings

The Toilet is located in a parking lot at the back of a crowded PVR Anupam cinema and shopping complex. There are slums on the left and a men's washroom adjoining the Pink Toilet along with which there is a garbage collection center on the right of the structure. On the back of the site, we have an open sewer. There is a road right in front of the site across which is the parking and the back exit of the

cinema hall. Near the location, there is a place called Hauz Rani which invites a lot of footfall in the washroom. The location could be considered a prime spot as it's located close to many schools, a shopping complex, hospitals, bus stands, and metro stations. This also tends to attract a very varied and diverse crowd to the area making the user base quite large.



It is important to ensure that the women do not feel unsafe while using a public toilet. To make the space more private and safe, A wall that restricts the view of the interior has been added. The wall also makes the pink toilet more welcoming with the poster of the woman as well as interactive with the QR code for feedback.

Facilities Available

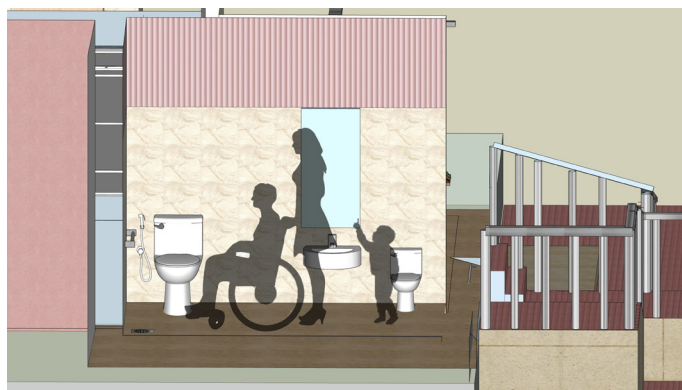
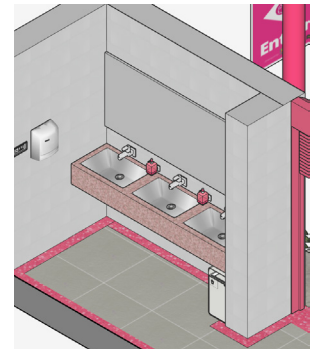
- 2 wash basin
- 2 bathing
- 5 western WC
- 4 indian WC
- 1 changing room
- 1 store room
- 1 handicap toilet
- 1 incinerator
- 2 pad dispensers

Facilities

Washbasins

Problem: At the current site, there are 2 washbasins to cater to 9 stalls. This is inefficient for the users and the facility can not keep up with the traffic coming in to use the space.

Solution: Keeping in mind the number of stalls and the amount of people coming in to use them, the number of washbasins has been increased from 2 to 4 with 1 washbasin per 2 cubicles. additionally, we provided incinerators dispensers and taps in cubicles for women to clean up during their menstrual cycle



Differently Abled toilet

Problem: The disabled washroom is too small for a wheelchair to fit and/or turn inside and doesn't have any source of ventilation either. Additionally, the washroom at the site currently has a completely different, secluded entrance ramp which makes it difficult to locate and also feel detached from the main building.

Solution: We followed all the mandated govt protocols to create an ergonomic disabled washroom, with comfortable space for turning around the wheelchair. We tried to include and follow the design practice of providing facilities for all, extending to cis and trans women, children and disabled individuals. Hence right at the very entrance we have an ergonomic ramp made according to the govt guidelines that can be used by both the disabled and the regular users.

Child WC

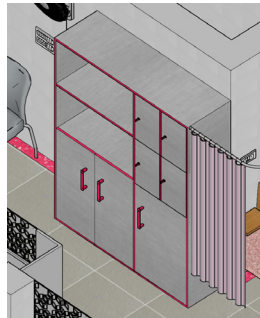
Problem: When interviewed, the children living nearby expressed not wanting to use the public washroom for fear of falling into the adult sized toilets. This hinders the goal of making the toilet child friendly.

Solution: We provided a smaller kids toilet to make the space, and keeping in mind the number and frequency of users, combined it with the disabled toilet to save space and increase efficiency. There is also adequate space for a caretaker to accompany the child.

WC's

Problem: The current site has 9 cubicles; 5 Western WC's and 4 Indian WC's. This has been found to be in conflict with popular consensus

Solution: The survey and interview responses revealed that most people preferred the Indian over the Western style of the toilet. This led to a change in the number of each style, the proposed plan contains 5 Indian WC's and 4 Western WC's.



Storage

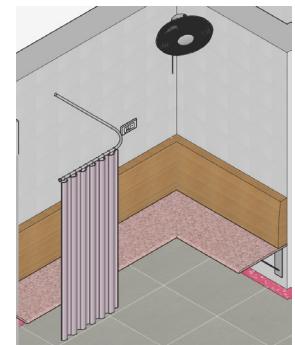
Problem: The stalls at the site have no hooks/shelves or other storage options inside making their use extremely inconvenient for someone carrying any bags forcing them to either put them down on the floor or leave them under the supervision of the attendant while they use the facility.

Solution: Locker shelves are given close to the attendants seating as well as overhead racks that can store large bags have been included as part of each cubicle to make the environment safer for the user.

Childcare Room

Problem: There are no proper childcare facilities present at the site currently. There are no baby changing stations or lactating rooms which isolate an important user group and their needs.

Solution: In our design we tried to create universal zones in our design that can be used by more than just a group of people. For instance, not many wheelchair users approach the site which is why we have a combined baby care area and disabled washroom. Likewise, we have a common resting and breastfeeding area for the occasional mothers.



Waiting Area

Problem: Many times, the number of people coming in to use the washroom exceeds the number of facilities available for use. In such a case, there is no area for the users to wait their turn. Even with the absence of a crowd, there is no designated space where people can interact or simply relax if they need to.

Solution: Providing a space for social interaction was another one of our goals. That's why we provided a sitting area that's a part of yet separated from the rest of the washroom that can encourage such healthy interactions. These seats are made with stainless steel and aren't upholstered making them easy to maintain in the moist bathroom environment.



Attendant's Area

Problem : The attendant doesn't have a space for herself and sits in whatever space is empty at that moment. However, since she needs to keep an eye on the movement of the washroom, this most often ends up being the entryway. She also has no space to store her personal belongings or carry out tasks like eating and writing.

Solution: The attendant's chair is also oriented in a way that she has a constant view of the entrance and is able to supervise who is coming in and going out. A janitor's closet and shelves have also been provided to store any essential cleaning supplies used in the toilet as well as anything the attendant might need.

STAFF INTERVIEW

Q - How many people visit per day?

A - 200-250

Q - Number of staff members and shifts?

A - 2 Staff

Q - Need for more staff?

A - Yes

Q - How many regular visitors?

A - 50-70

Q - What is the peak hour?

A - Morning hours

Q - Do you check the washroom after every use?

A - Yes

Q - Are sanitary napkins available? Do you charge for that?

A - Yes they are available, 1 pad is charged at rs 5

Q - Is there any privacy concern.

A - not really

Q - Do you feel safe?

A - yes

Q - Do transgenders come here?

A - yes. They often come to shower as they are denied access in other washrooms

Q - When disabled people come, do you help them out or is the washroom well equipped for them?

A - Helps if asked for

Q - Do people come here to change clothes?

A - Yes

Q - Do people ask for a shower area?

A - Yes

Q - Usage of western v/s Indian toilets

A - Both are almost the same but Indian WCs are used more by a small percentage

Q - Do people take their bags with them?

A - yes

Q - Is a separate space required to keep the cleaning items?

A - yes

Q - How many times do you clean the washroom?

A - 5-6 times a day

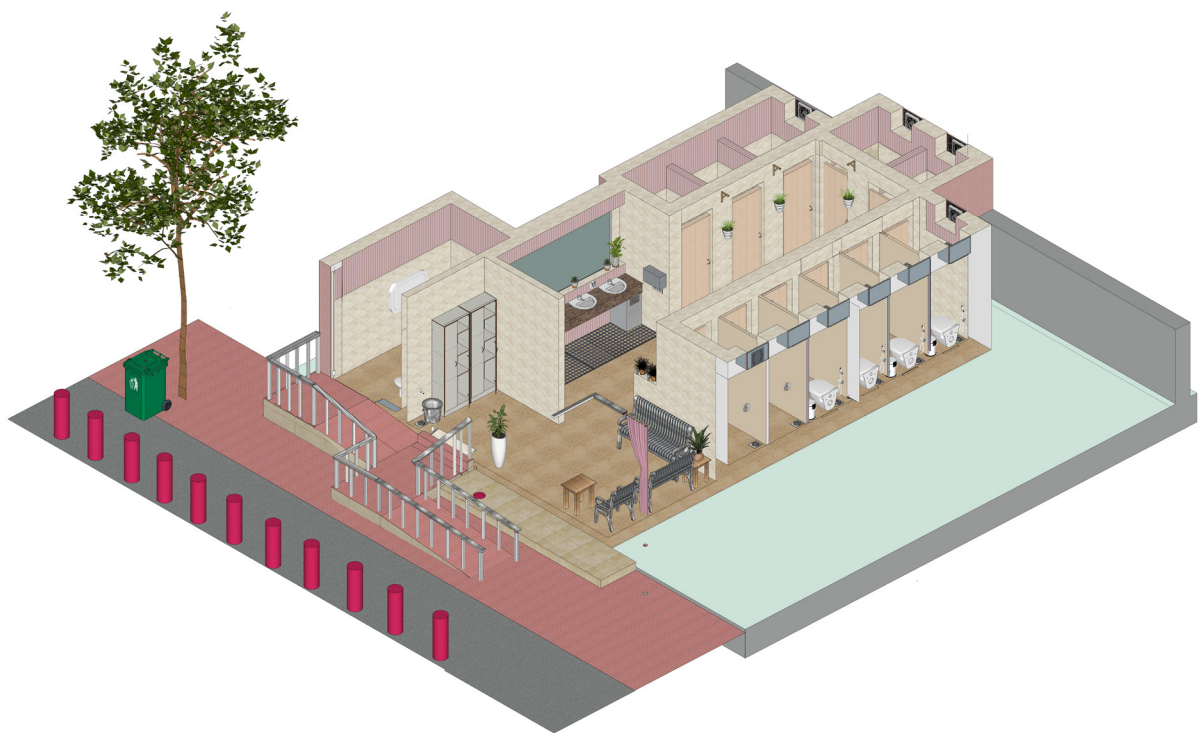
Q - Do you face any challenges?

A - It's not visible from the outside and people are apprehensive to approach it due to the presence of a slum dwelling beside it

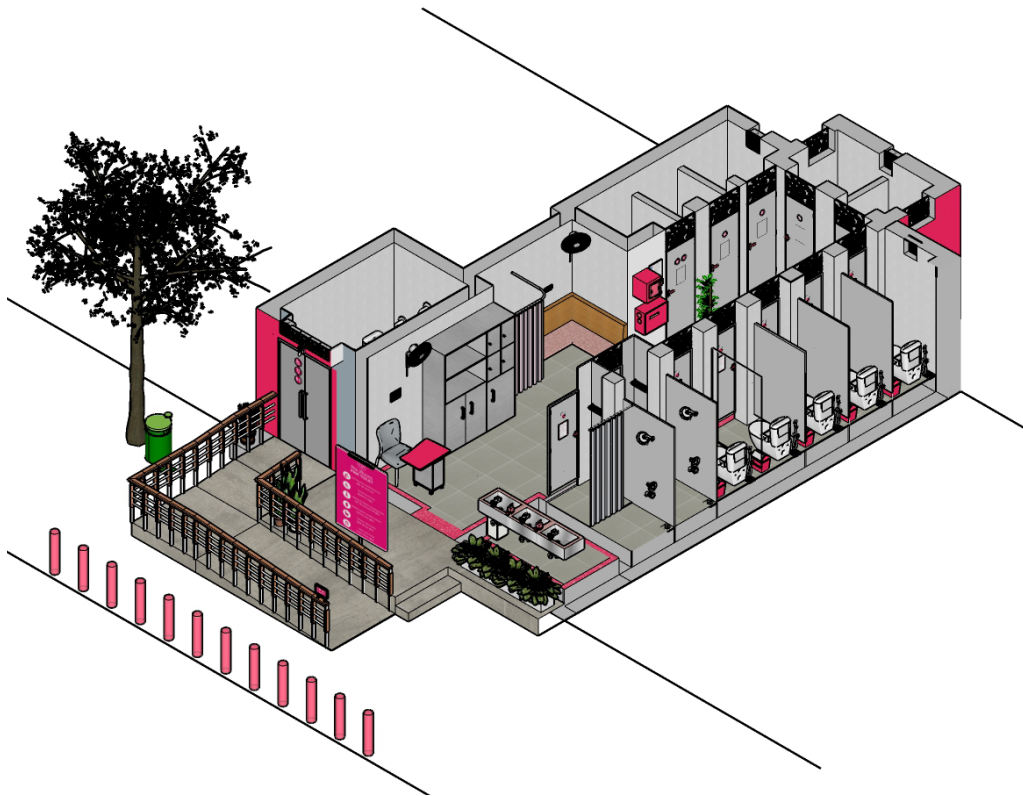
Q - What chemicals are used?

A - Diversey is the brand used. They use the floor cleaner, fragrant spray, hand sanitiser and soap from that brand

Proposed Plan 1



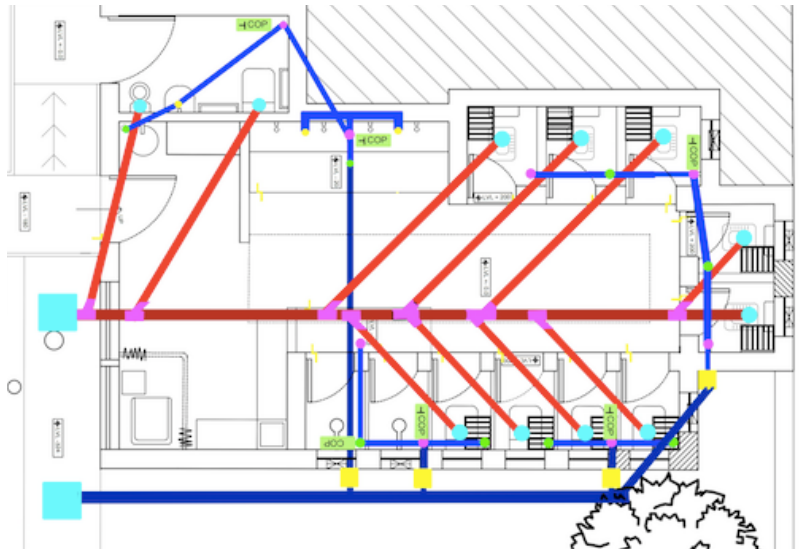
Proposed Plan 2



Drainage

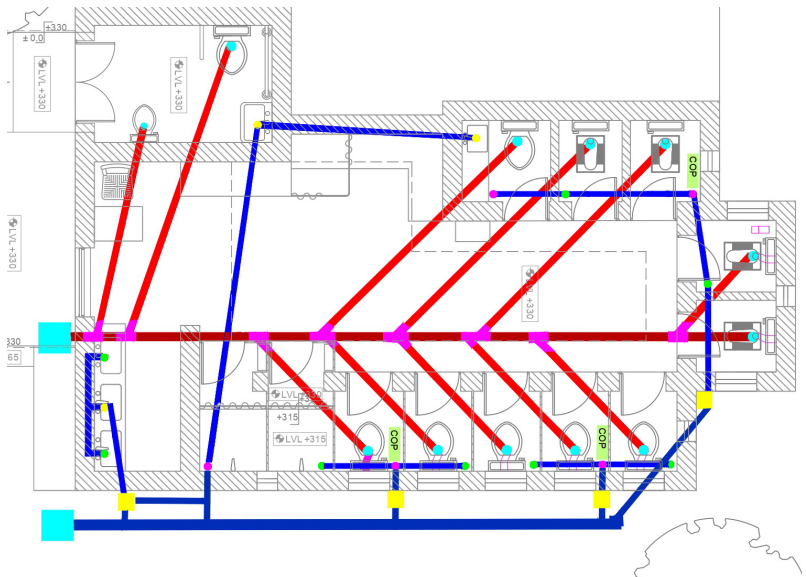
Do's

- Connect Floor Drain to Floor Trap. Maximum 3 Floor drains can be connected to one Floor Trap.
- Connect Feeding Soil Pipe to Main Pipe using a 45-degree YT bend.
- Have Clean Out Plugs at possible ways for regular easy maintenance checks.
- Always install the pipe and bends in the direction of flow.
- Use P-Trap as it helps to lock sewer fumes.
- Keep the distance between Floor Trap and P-Trap (not less than 280 mm).
- Waste Feeding Pipe= 75 mm Ø, Waste Main Pipe- 85 mm Ø
Soil Feeding Pipe= 100 mm Ø, Soil Main Pipe- 150 mm Ø
- Inspection chambers should be provided outside the toilets for better accessibility and privacy of the users.
- Connect Gully Trap to Inspection Chamber.



Dont's

- Never connect Wash Basin to Floor Drain as Wash Basin has a P-Trap.
- Never have a feeding pipe in opposite direction in Main Soil Pipe as it may tend to Pipe Blocking.
- Don't use S-Trap as it tends to backflow and also needs extra water pressure for flushing than a usual flush.
- No 90-degree piping for the sewage system.

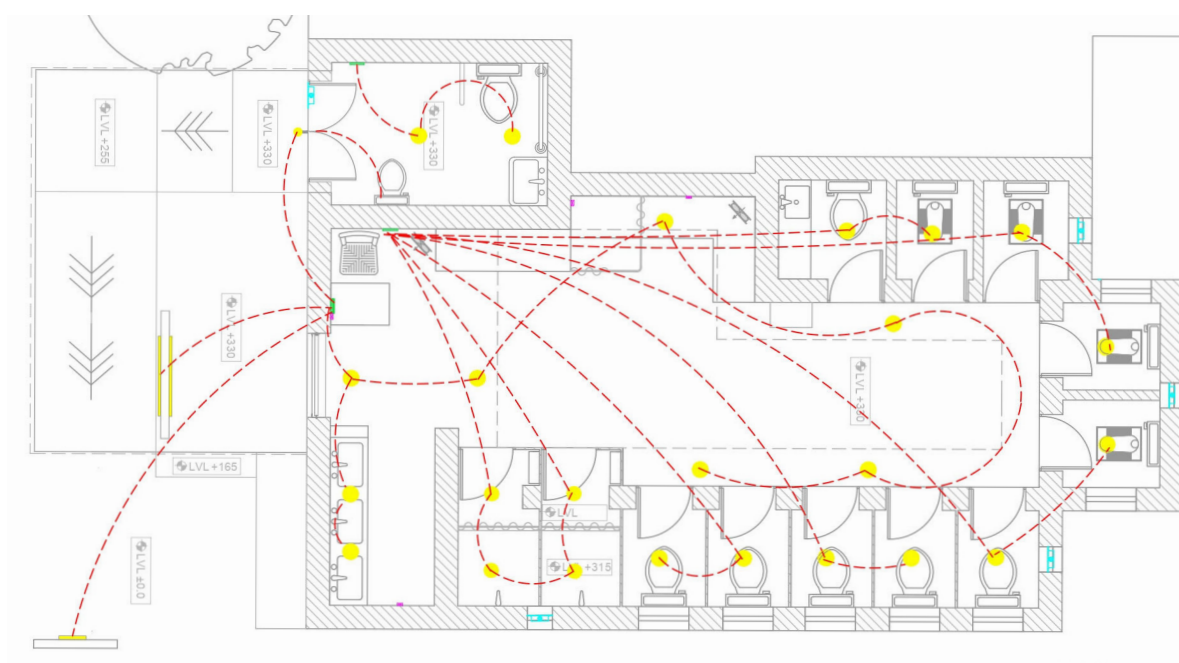
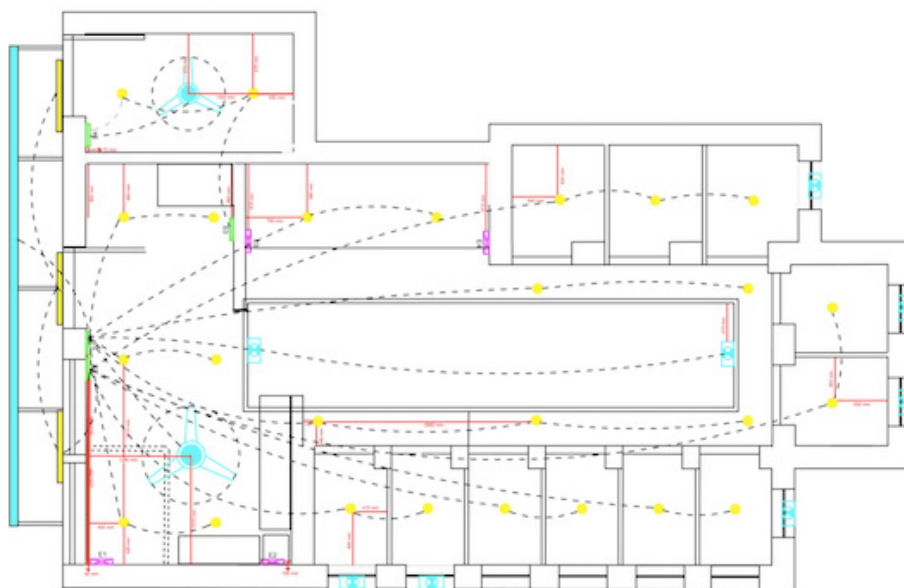


	Gully Trap
	Inspection Chamber
	Pipe Connectors
	75 mm CPVC waste feeding pipe
	85 mm CPVC waste main pipe
	100 mm CPVC Soil feeding pipe
	150 mm CPVC Soil main pipe
	Floor trap
	P - traps
	Collection points
	Floor drain
	Clean out Plugs

Electricity and Lighting

Do's

- Interior lighting should be provided during operating hours and should be bright enough to illuminate entrances, exits, wash areas, cubicle & urinal spaces and publicly accessible areas.
- Exterior lighting should be provided at all times to discourage vandalism and at spotting areas of concealment.
- It also prevents fall accidents.
- Emergency illumination devices shall be provided to allow for a safe exit from the toilet. toilets should be provided with warm color lighting for both general areas as well as washbasin areas



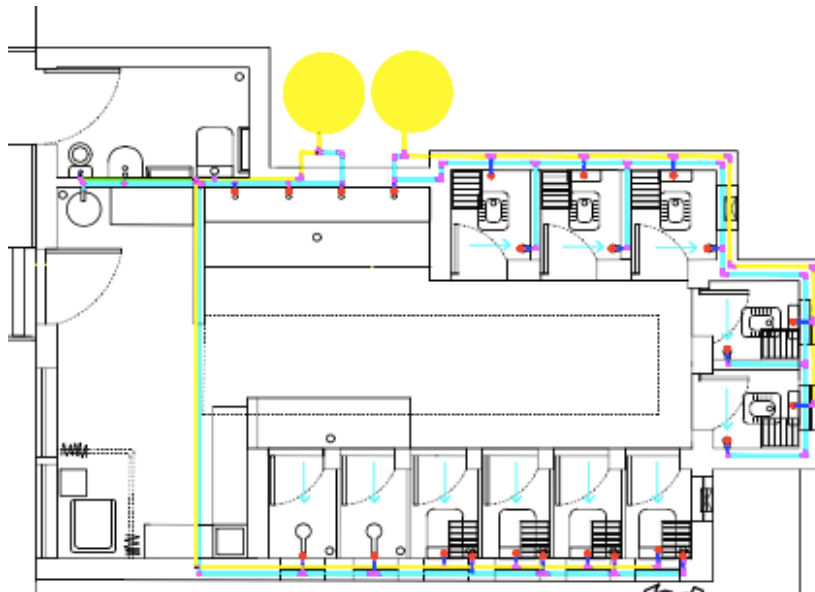
Don't's

- Don't put dark and off-coloured lighting as it can create the impression that a toilet is not clean.
- The general lighting level should not be less than 300 lux.
- Avoid using incandescent bulb or CFL's as they are not energy efficient.
- Don't put the same watt lights every where because they cause illusion and distress to the eyes.

	SYSKA: 5W LED circle light. 4000 K. (Diameter=820 mm)
	EXHAUST FAN HAVELLS: Venti Air DX 300 mm
	SOCKETS HAVELLS: Crabtree 10 AX
	SWITCH BOARDS HAVELLS: Crabtree 10 AX
	CEILING FAN HAVELLS: Enticer 900 mm
	LOOPING
	SYSKA TUBE LIGHT B22 18 W
	PANASONIC LED STRIP LIGHT IP65 PSLM07253

	S1	6M Height = 1200
	S2	6M Height = 1200
	S3	2M Height = 1200
	S4	3M Height = 1200
	E1	6M Height = 550
	E2	3M Height = 550
	E3	6M Height = 800
	E4	6M Height = 800

Water Supply



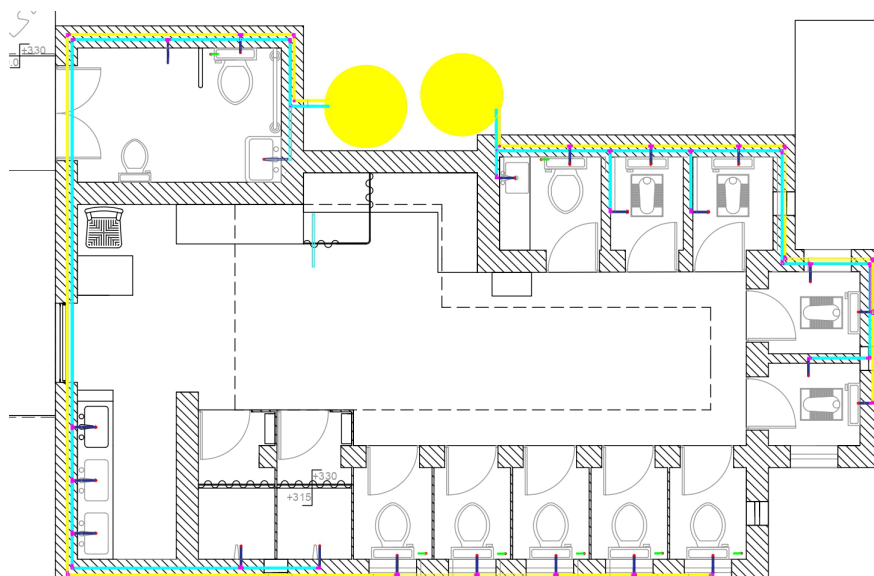
Do's

- Plumbing main pipe should flow vertically up to 18 inches from floor level and then horizontally to all the feeding pipes. As all the faucets are at 18 inches or above.
- Use fewer bends, more the bends in piping, less pressure of water which leads in water leakages.
- Flush Running Supply Pipe (horizontal)= 25 mm Ø
- Faucet Running Supply Pipe (horizontal)= 35 mm Ø.
- Faucet Feeding Pipe (horizontal)= 20 mm Ø.
- Running Supply Main Pipe (vertical) = 35 mm Ø

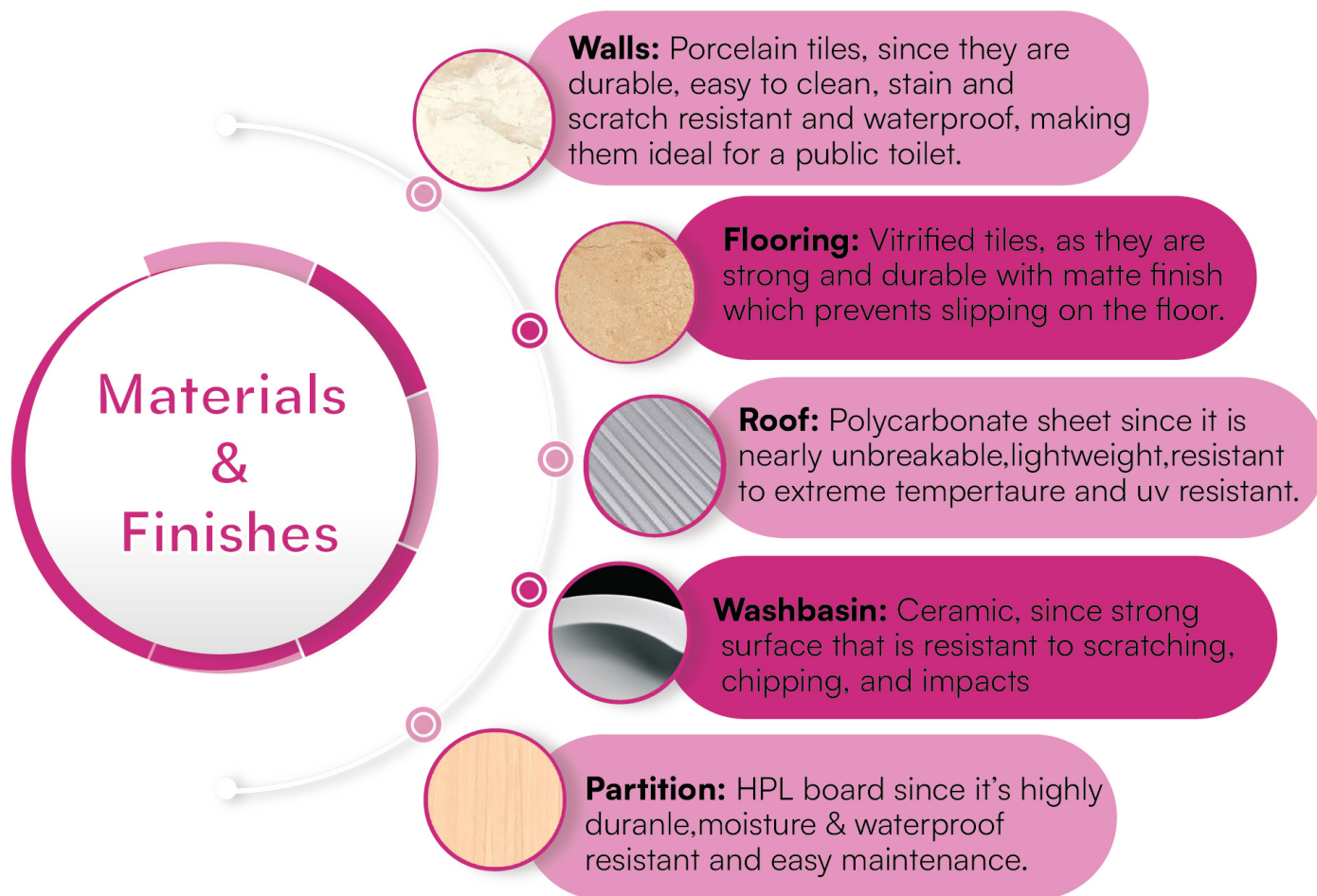
Don't's

- Don't use many vertical pipes and branches to the single pipe, to maintain pressure.
- Don't install plumbing and drainage pipes adjacent to each other.
- Don't use porous pipe as to avoid any water contamination.

	25 mm PPR pipe - flush tank running supply pipe (horizontal)
	32 mm PPR pipe - faucet running supply pipe (horizontal)
	20 mm PPR pipe - feeding pipe (Horizontal)
	PPR barb adapter
	PPR elbow adapter
	PPR tree adapter
	Plastic water tank
	Supply point
	Vertical pipes
	Direction of Slope



Material and finishes



Recap

- The site is located in Saket behind the Anupam PVR with the entrance facing the north direction. The site has an open courtyard typology which makes it different from other pink toilets.
- The site is very close to Malviya Nagar metro station as well as Saket G block bus stop and Anupam cinema bus stop. The site is also considered a prime location because of the large number of parks, schools, temples and market near by.
- Efforts have been made in order to increase the awareness of the site which includes way finding - adding signage around the locality which shows the facilities available with universal symbols. And branding via logos, posters, etc.
- The facilities currently available include 5 Indian wc's, 4 western wc's, 4 wash basins, 2 bathing and changing areas, breast feeding area, baby care area, waiting area, An incinerator and sanitary pad dispenser.
- As per the guidelines there were few issues, such as the ratio of washbasins and WCs, availability of Indian WCs, lack of lighting and air flow, no proper lavatory for children and differently abled people and no proper waiting and attendants area, all of which has been resolved in the proposed plan.

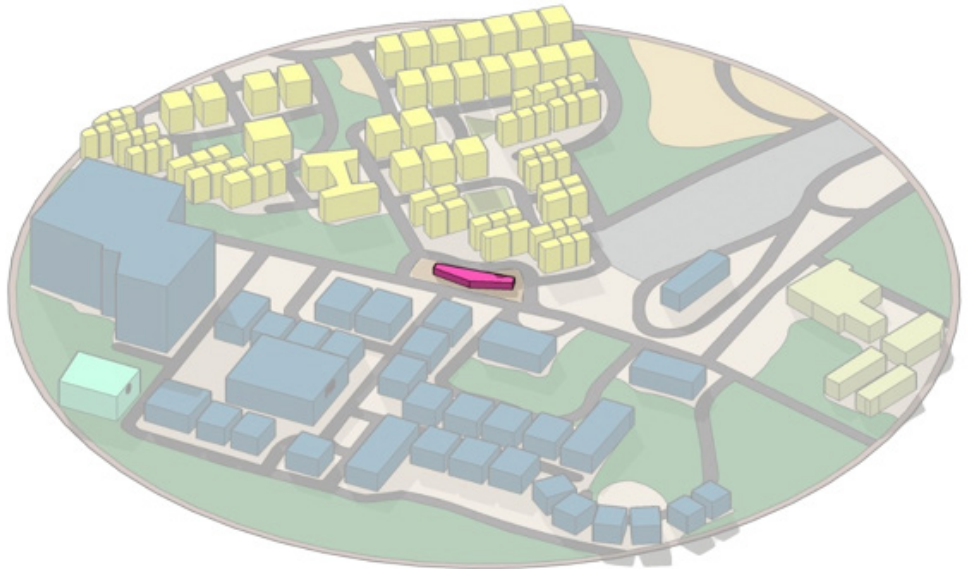
CASE STUDY: VASANT VIHAR

About

This site is located in Vasant Vihar, New Delhi. The entrance faces towards the north and covers an area of 450 square feet. It is covered with an aluminum fiber sheet that is running through the length of the toilet with billboards on it. There is another entrance towards the east, which is not visible from the outside because of the aluminum fiber sheet and billboards. The main road is in the east direction with a police booth in the north direction. The other two sides of the site are covered with trees.

Location

Moving on to the site context, the area within the 200m of the site consists of significant high traffic areas such as the Priya market, Vasant Vihar metro station, and Vasant Continental. There is also a hospital and a gurudwara nearby which makes this site easily accessible to a lot of activity generating areas. The site is connected to roads like Munirka marg, Mall road and Vasant vihar poorvi marg. A lot of parks can also be sighted near the pink toilet.



Wayfinding



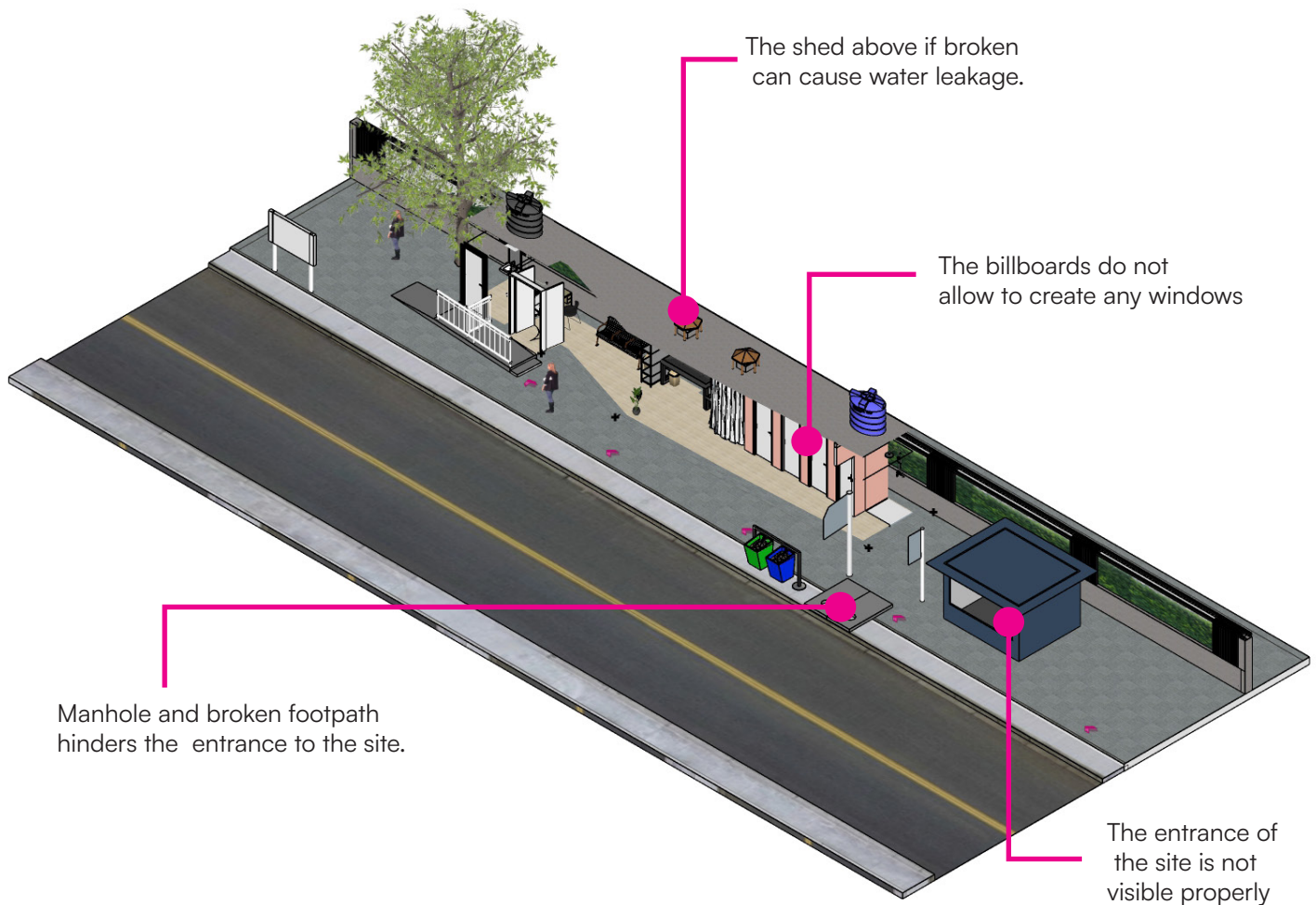
- The directions will be represented by a woman icon, indicating that it is a women's toilet, on signage posters. It will also be used for navigation, since these posters will be put at various intervals from the pink toilet to facilitate access, create visual communication, and raise awareness of the toilet's existence.
- There would also be signage posters in various locations, such as pole signage and stickers on the footpath, to indicate the direction to the pink toilet.
- Outside the toilet, in the immediate surrounding, some posters representing various information and the toilet route will be posted.
- There are branding options for the pink toilet's exterior walls, taking into account an increase in footfall in the future. where there is typography with the logo, for it to become eye catching even from a distance, the surrounding area has poles, which indicate the users who can use the toilet, with some posters which explain the facilities that are available with QR codes to record feedback.



Immediate Surroundings

The adjacent CBI community, which is located to the west of the pink toilet, is in the immediate site area. While the Priya market is just across the street from the front of the toilet facing the main road, it is a popular gathering spot for locals. The main road between the pink toilet and the Priya market is the Munirka Marg. In the north direction, a police taxi booth is located directly across the street from

the entrance, although it is currently inoperable. The site is located on a walkway that runs parallel to the major road, Munirka Marg. On the site, which is enclosed by a pink-colored aluminum fiber covering, there are two billboards. Also, there are notice poles straight outside the entry, as well as a manhole and two trash cans on the walkway.



The entrance of the site has been shifted from north to the east direction which makes the entrance in front of the main road. Doing this, solves the problem of visibility of the entrance and makes it more accessible for the users. The entrance for the handicapped has also been added which is again, closer to the main road footpath increasing the accessibility for this user group.

Facilities Available

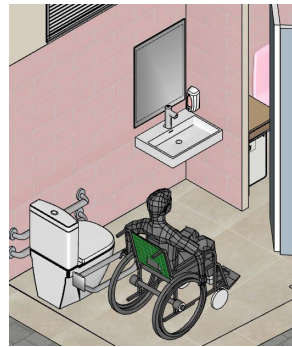
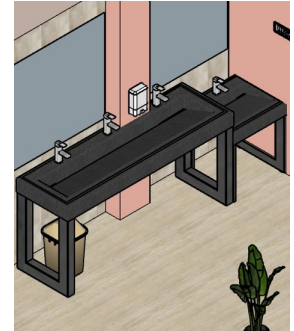
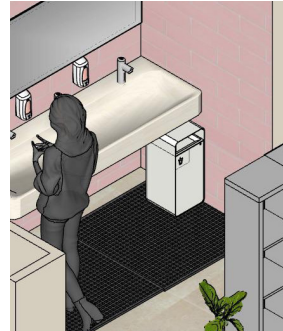
- 3 Western WC
- 2 Wash basin
- 1 Storage room
- 1 Changing Room / Baby care facility
- 1 Attendants Room
- 1 Incinerator
- 1 Sanitary pad dispenser

Facilities

Washbasins

Problem: The number of washbasins should be equivalent to the number of WCs, according to Ministry of Health and Urban Affairs guidelines. In reference to the site, there are two washbasins for each of the three western WCs, which is in violation of the requirements.

Solution: For each WC indicated in the plan, an equal number of washbasins should be provided. Separate washbasins are incorporated into the Children's cubicle and the Differently Abled cubicle for easy access.



Differently Abled toilet

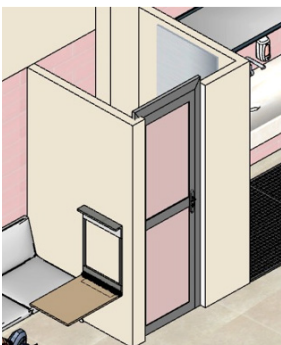
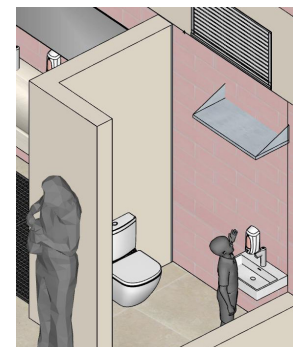
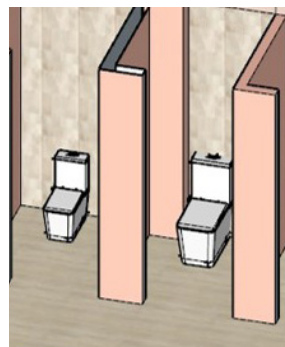
Problem: The Pink toilet also caters to differently abled people. Every person has a right to sanitation. The absence of the separate toilet facility for them makes this user group feel uncared for.

Solution: A washroom for differently abled which caters and is made according to their needs is provided with a separate entrance. access while maintaining the privacy of women using the facility.

Child WC

Problem: The pink toilet also caters to children, however the lack of a separate children's toilet facility makes it difficult for them to use it. Also due to the presence of a market nearby, many women with their children use this facility.

Solution: Children's restroom facilities are provided in accordance with their standard needs. If the mother needs to help her child onto the toilet, there should be ample space in the cubicle.



Changing Room

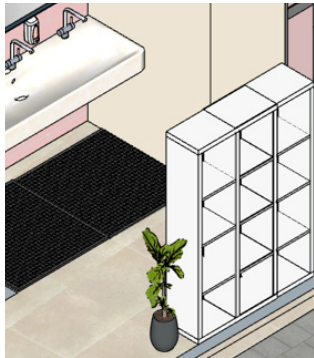
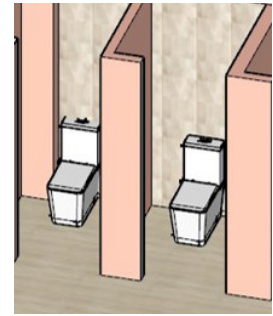
Problem: Through the interviews and surveys conducted, it was derived that many women use the public toilets to change into their uniforms specially in the mornings. A changing room would enhance the user experience while using a public toilet.

Solution: A separate space (not being a wet area) would be more convenient, spacious and user friendly.

Western WC

Problem: There are just western WCs available; there are no Indian WCs. According to interviews and studies, most women prefer Indian WCs as there is little or no physical contact and is more hygienic.

Solution: An equal number of Indian and Western Wc's should be provided. Alternatively, one Indian Wc should be present over two western Wc.



Storage room

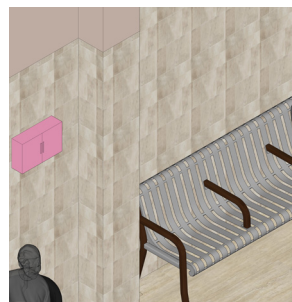
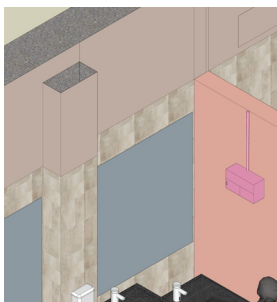
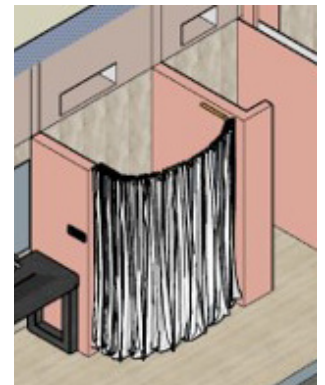
Problem: There is a separate room provided for storage which makes the space inefficient and ineffective.

Solution: Rather than an entire storage room, we might provide a storage rack or shelves, making it more efficient and effective.

Changing room/ Baby care facility

Problem: There is a marble slab that is quite cold for changing baby's clothes, and there is no basin for washing baby's clothes.

Solution: An area with a slab and basin should be given for the mother to change and clean her baby's clothing. There may also be some storage space available for her belongings.



Incinerator

Problem: There is no guide on how to use an incinerator.

Solution: There should be posters with step by step guide on them on how to use an incinerator

Attendants area

Problem: Currently, there is only a chair for the attendant at the entrance of the toilet. There is no table for her to write on or to keep her records on.

Solution: The attendant requires a dedicated space with a chair and table for her to sit and write on along with storage space for her to keep her belongings.



STAFF INTERVIEW

Q - How many people visit per day?

A - More than 20

Q - Number of staff members and shifts?

A - 2 shifts (6am - 2pm, 2pm - 10 pm)

Q - Need for more staff?

A - Yes

Q - How many regular visitors?

A - 5-10 visitors

Q - What is the peak hour?

A - In the morning and evening

Q - Do you check the washroom after every use?

A - Yes

Q - Are sanitary napkins available? Do you charge for that?

A - Yes, It is charged at rs 5

Q - Is there any privacy concern.

A - no

Q - Do you feel safe?

A - yes

Q - Do transgenders come here?

A yes

Q - When disabled people come, do you help them out or is the washroom well equipped for them?

A - The washroom is not specially equipped for people with disability, but staff helps them out if they need any help.

Q - Do people come here to change clothes?

A - Yes

Q - Do people ask for a shower area?

A - yes

Q - Usage of western v/s Indian toilets

A - There are no Indian toilets, but a lot of people ask for it.

Q - Do people take their bags with them?

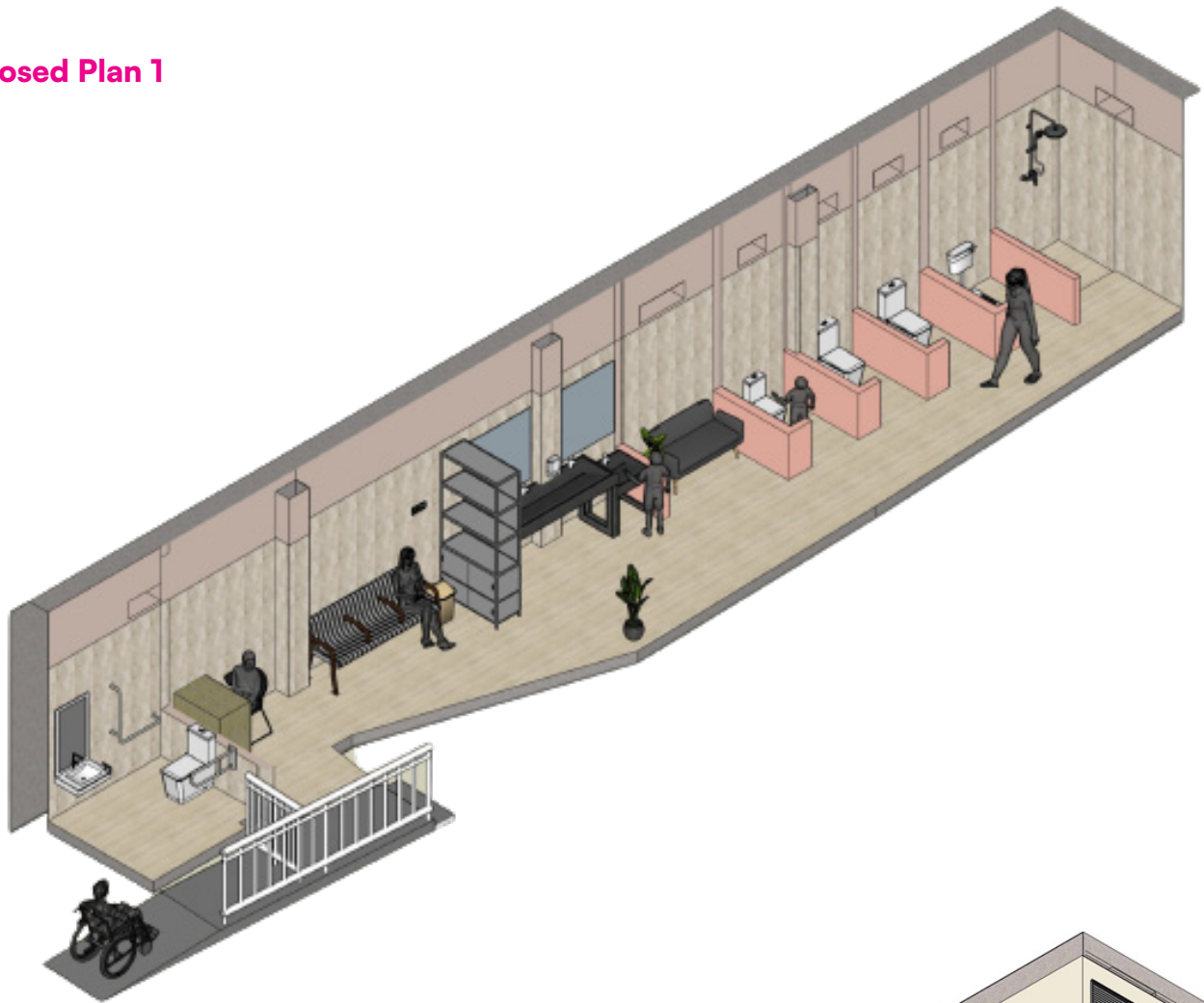
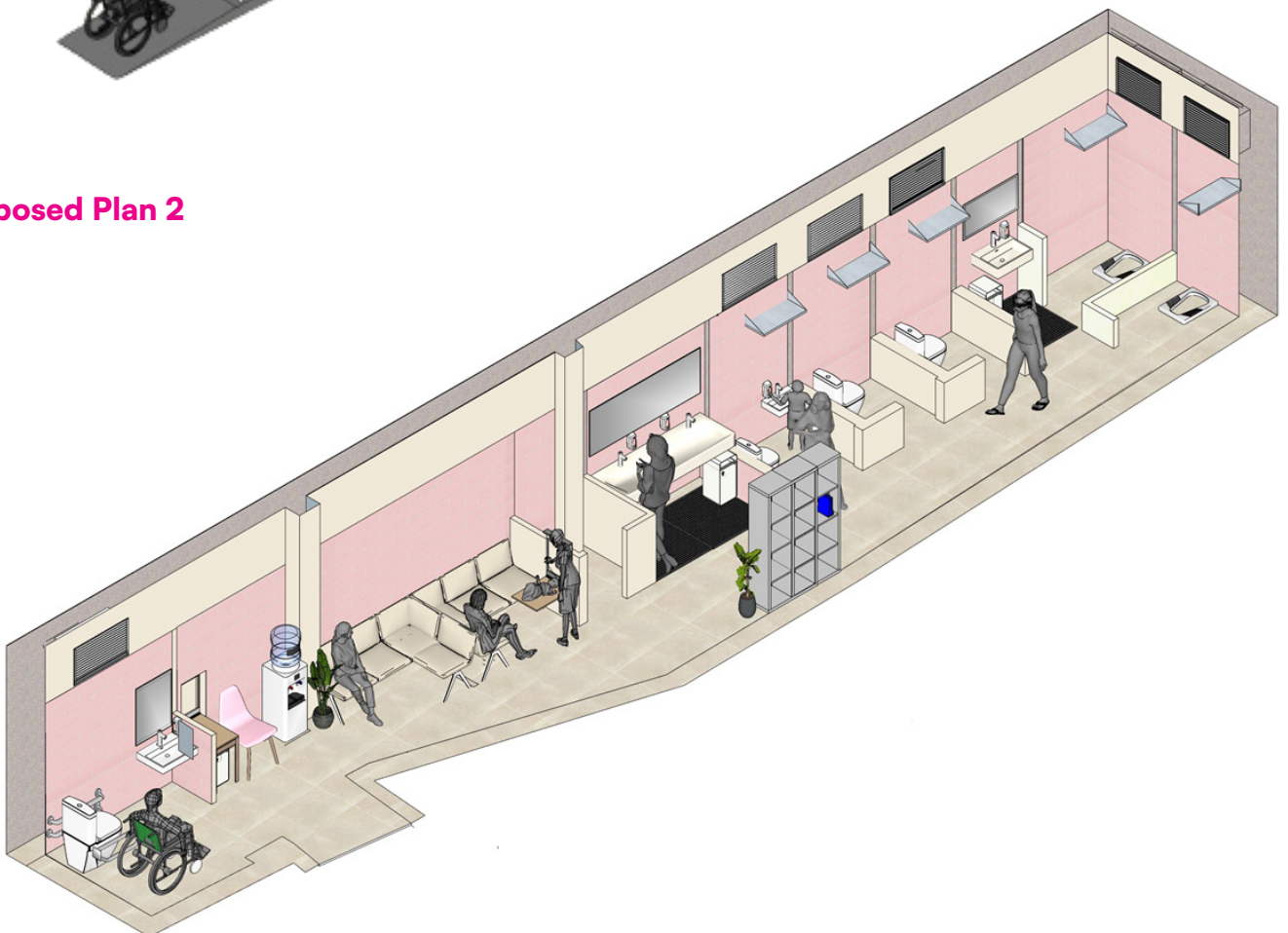
A - yes

Q - How many times are the washrooms cleaned?

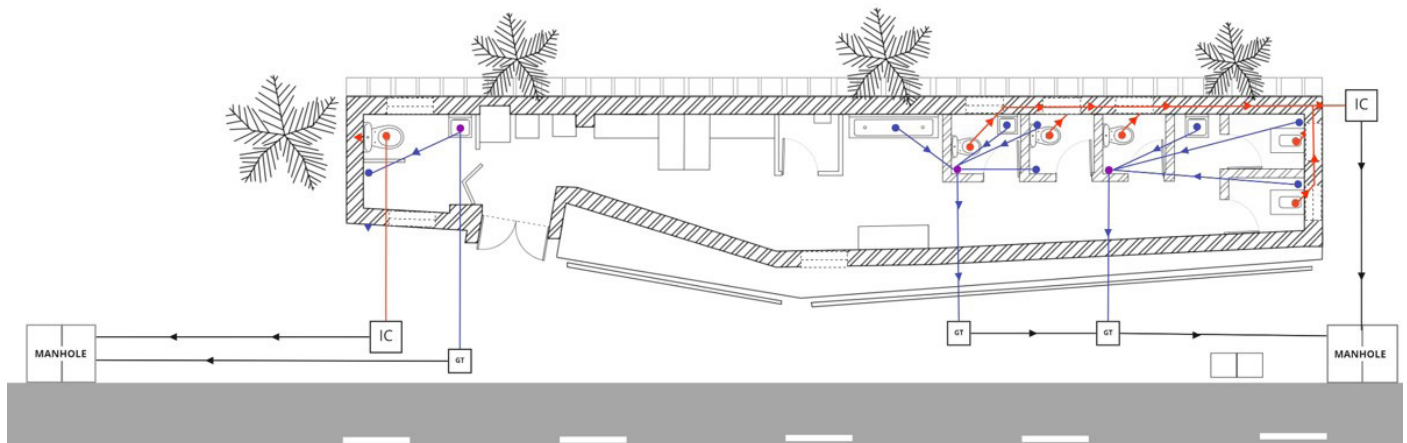
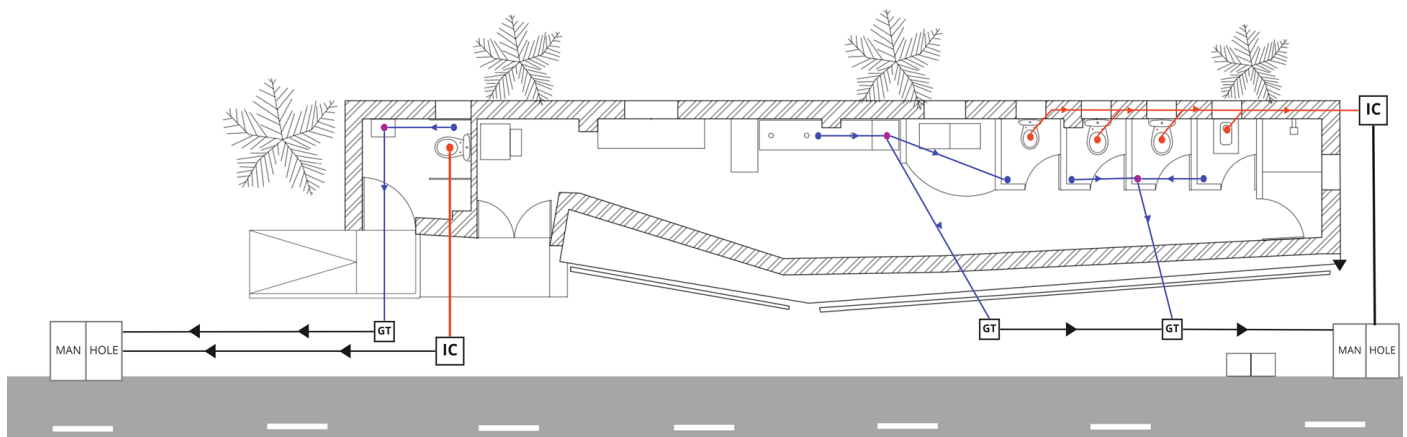
A - A lot of time in a day. The more people using the toilets, the more the no of times that I clean. 4-5 times a day.

Q - Odour or smell?

A - Yes

Proposed Plan 1**Proposed Plan 2**

Drainage



Do's

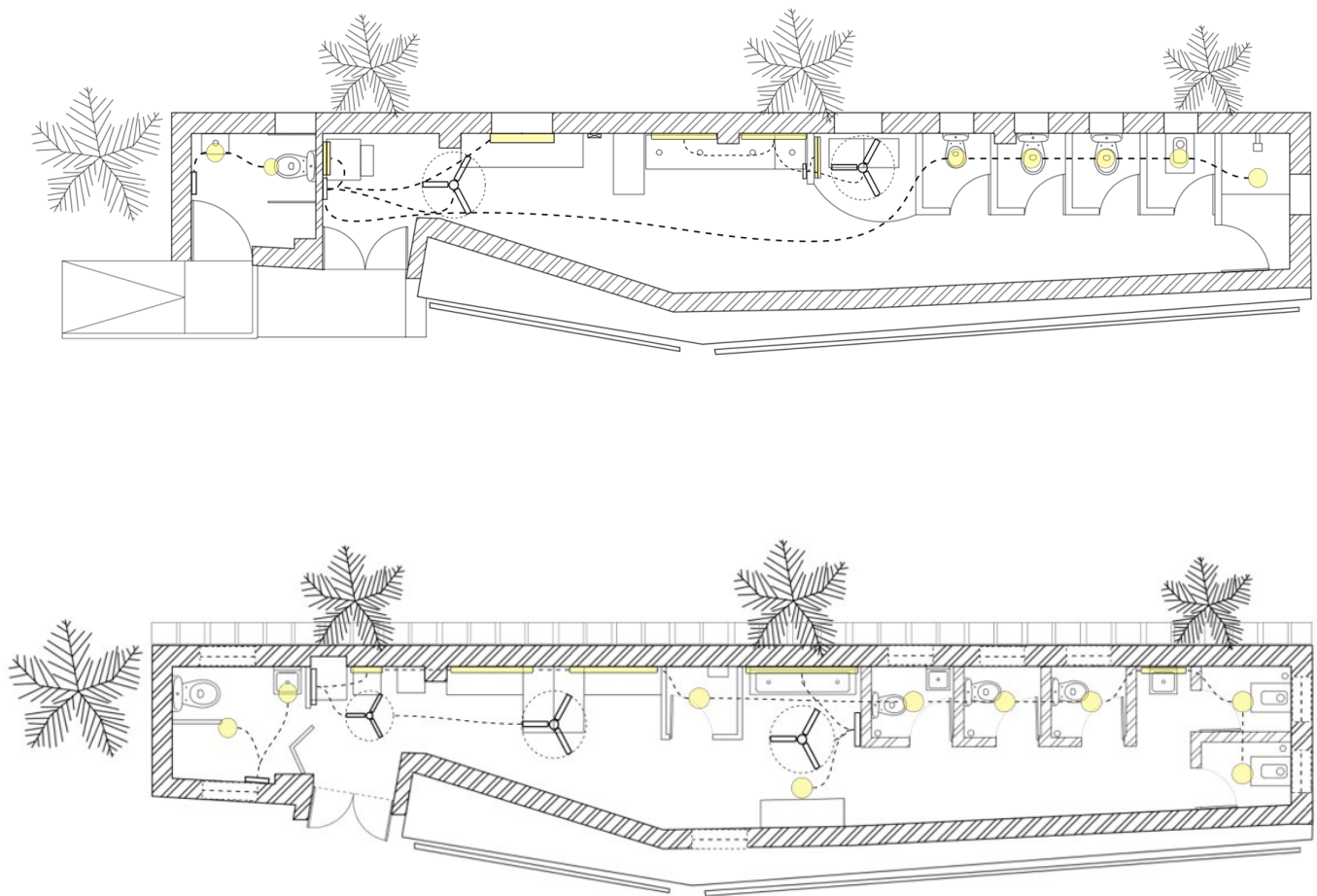
- 3-4 Floor drains can be connected in one floor trap.
- 45 degree bend in pipe fittings to prevent backflow.
- Install P traps since they are provided with Water locking system.
- P-trap is simple to install and inexpensive.

Dont's

- The S-trap should not be used in plumbing installations. They are prone to blockage, Requires more water pressure and The waste may backflow.
- Inspection chambers should be provided outside the toilets for better accessibility and privacy of the users.
- Not to provide the pipes with less than 80mm diameter for Waste pipe and Soil pipe- 100mm diameter.
- Maximum distance between pipe and manhole not to exceed beyond 30m.

LEGEND	
	FLOOR TRAP (75mm)
	FLOOR DRAIN
	WASTE PIPE (80mm)
	SOIL PIPE (100mm)
	P TRAP FOR WC (30mm)
	GULLY TRAP (250x250mm)
	INSPECTION CHAMBER (450x450mm)

Electricity and Lighting



LEGEND	
---	CONNECTING LINES (WIRES)
●	LED CEILING MOUNTED LIGHT (12W - 5000K)
■	LED MIRROR LIGHT (16W - 5000K)
■	LED WALL MOUNTED LIGHT (12W - 5000K)
⋈	CEILING FAN (42")
□	SWITCHBOARD
□	SOCKET

Do's

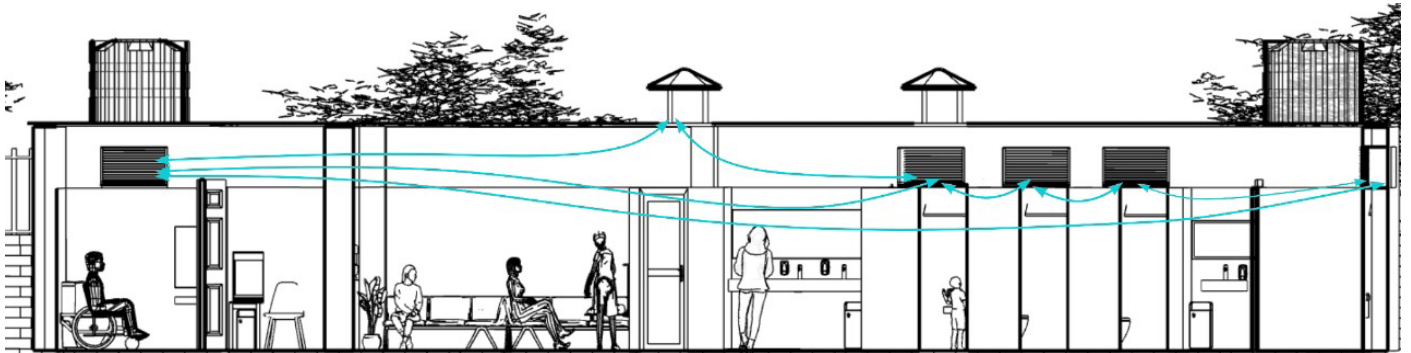
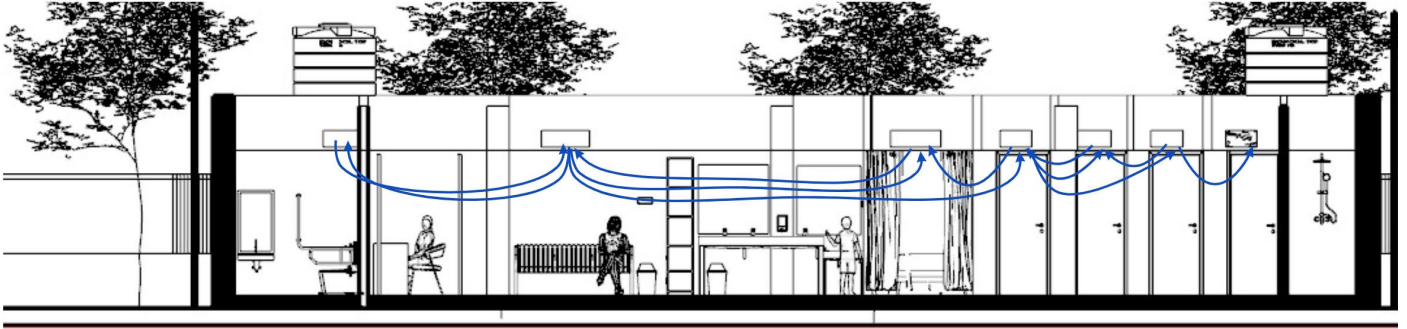
- All toilets should be provided with warm color lighting for general lighting as well as downlights above the washbasin/mirror.
- The attendant of the washroom should have control of all lights and switches in order to maintain the ambiance of the washroom and save light and energy wherever and whenever possible.
- Wherever possible or alternatively encourage usage of energy-efficient lighting fixtures (LED).

Don't's

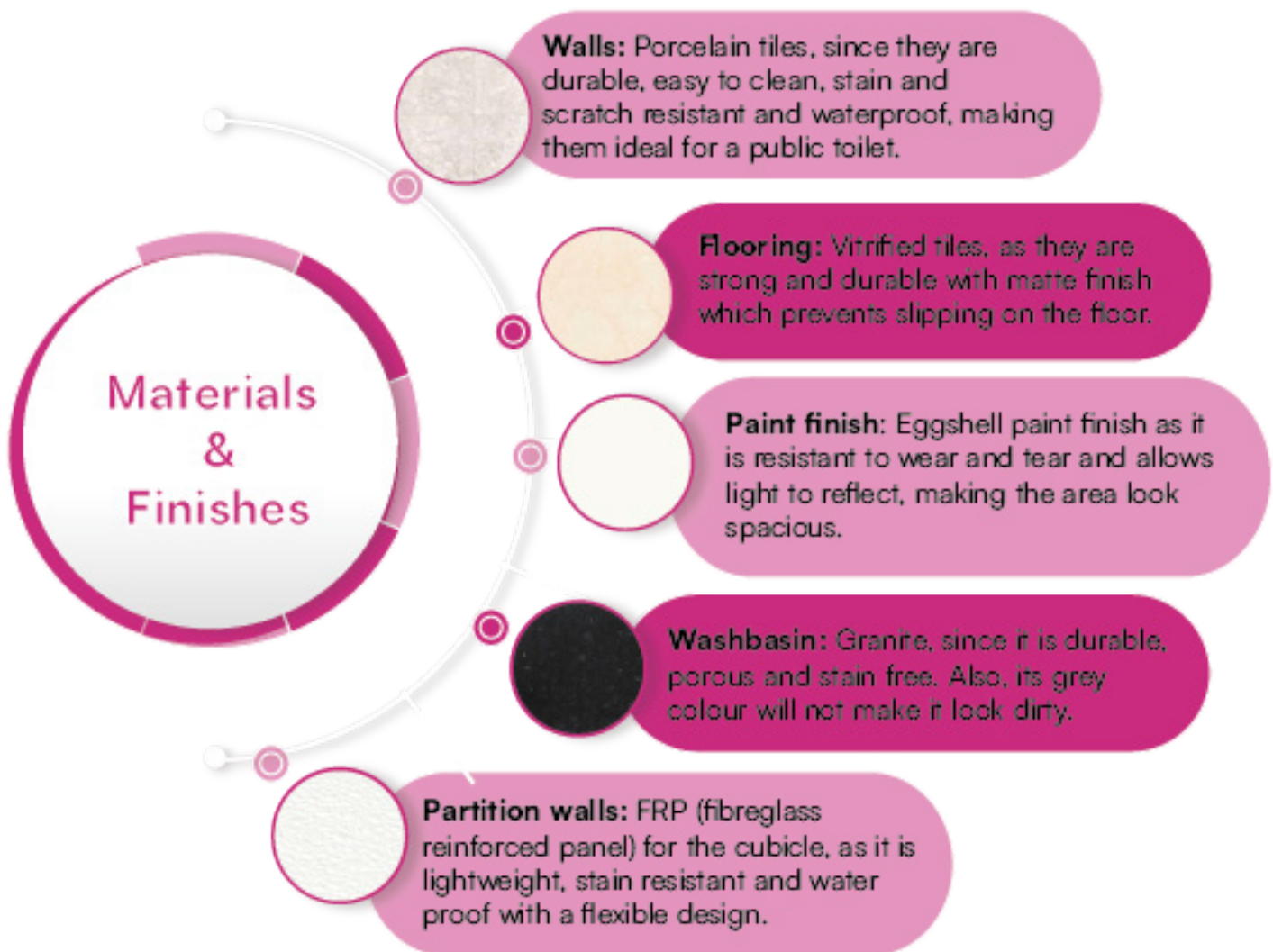
- The general lighting level should not be less than 300 lux.
- Exposure to harsh fluorescent lighting can cause eye strain and blurred vision hence the intensity of the light should not be an issue for the users.
- The washbasins and bathing areas should not have sockets. Having an exposed plug socket coming in contact with water can increase the risk of electric shock.

Ventilation

To ensure the privacy of the toilet, we have placed louvred windows above the lintel level for ventilation. We have placed louvred windows on the walls of toilet cubicles in order to address the issue of odour. We've also added exhaust fans to the already existing skylights, making it a very effective and efficient way of ventilating the space by allowing air to flow in and out through the louvres and skylights. Because the cubical for differently abled people is at the far end of the site, we installed two windows opposite each other, one for exhaust and the other for cross ventilation.



Material and finishes



Recap

- The site is located in Vasant Vihar. There are 2 entrances. The main entrance is in the north and the other one is in the east, which is not visible since there is an aluminium fibre sheet through it with billboards on it.
- The area within the 200m of the site consists of significant high traffic areas such as the Priya market, Vasant Vihar metro station, and Vasant Continental.
- There are few branding options which have been proposed for its awareness and accessibility and considering increase in footfall in near future.
- The facilities currently available on the site were 3 Western WC, 2 Wash basin, 1 Storage room, 1 Changing Room / Baby care facility, 1 Attendants Room, 1 Incinerator and 1 Sanitary pad dispenser
- As per the guidelines there were few issues, such as the ratio of washbasins and WCs, availability of Indian WCs, lack of lighting and air flow, no proper lavatory for children and differently abled people and no proper waiting and attendants area, all of which has been resolved in the proposed plan.

RECOMMENDATIONS



After design implementation done on the two prototypes, A generalized design brief has been created. We talk about the space standards, preferred material and finishes as well as plumbing, lighting, ventilation, etc. We also talk about the Pink Toilet as a brand and how we spread awareness about the same.

SPACE STANDARDS AND FACILITIES

Cubicles

- Type of closets: Appropriate number of Indian and western closets should be provided as per standard dimensions.
- Material: The material used in the closet itself should be durable, easy to maintain and clean.
- Water traps: 20mm traps with water seals should be used, which require only 2 liters of water to push excreta. Traps of over 50 mm with water seals must be avoided to avoid loss of water during flushing.
- Western Closets: All western toilets should preferably be wall-mounted and fitted with manual or automatic flushing devices.
- Fixtures and dispensers: The fixtures should be concealed in a way to prevent their destruction. Toilet paper dispensers are to be provided adjacent to the water tap. An ablution tap coupled with a hose and a spring-loaded nozzle should be installed in all toilets. A floor trap should be provided within the toilet where it is fitted with an ablution tap, bucket, and mug.
- Storage: Hooks should be fixed at a convenient height behind the cubicle doors so that the user can hang her bags/stuff.
- Partitions and doors: Doors and cubicle partitions should be tightly fitted to avoid gaps and openings.

CUBICLE	MINIMUM	OPTIMUM	RANGE
LENGTH	750	900	750-1200
BREADTH	900	1200	900-1500
HEIGHT	2100	2100	2100-2400

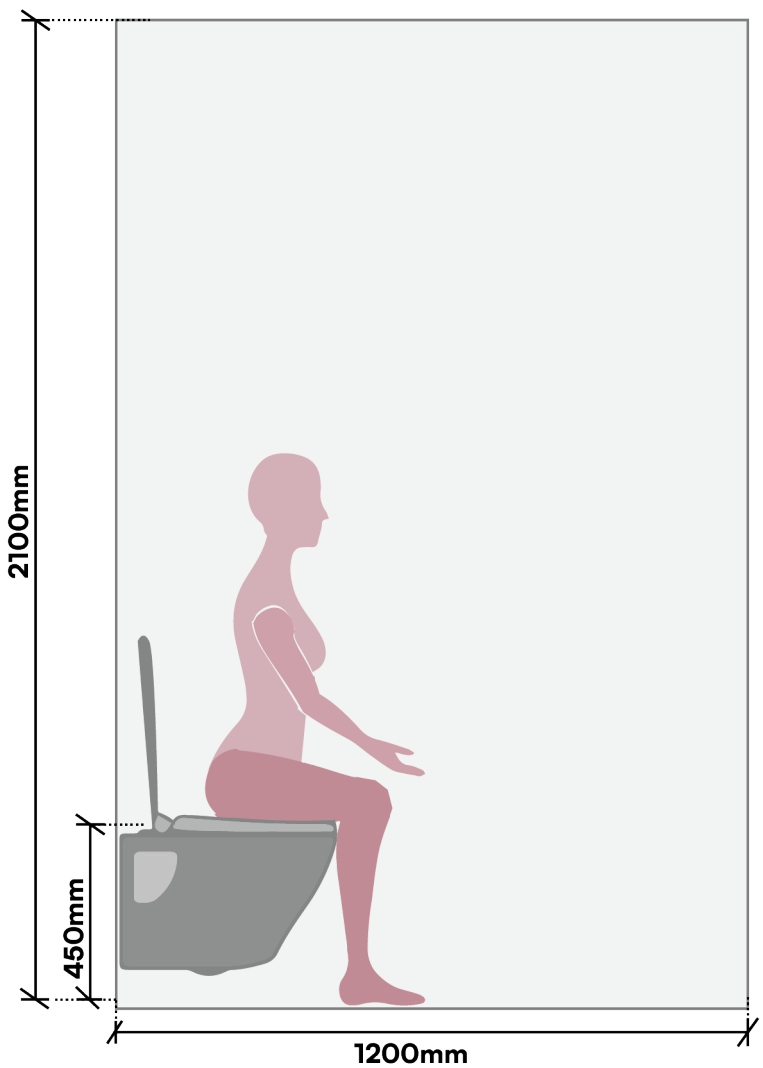
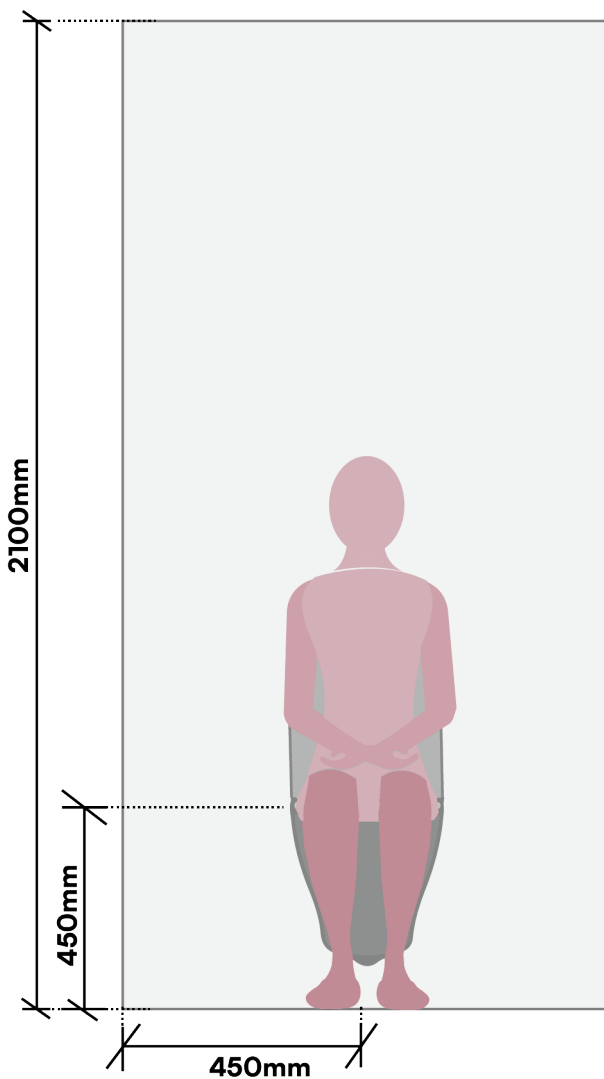
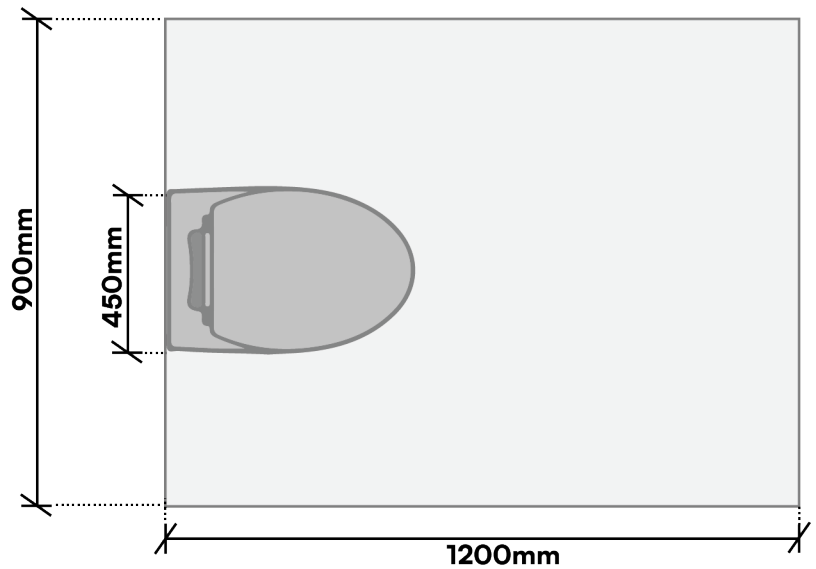
INDIAN W.C.	MINIMUM	OPTIMUM	RANGE
LENGTH	450	675	750-1200
BREADTH	400	450	400-500
HEIGHT	-	-	-

WESTERN W.C.	MINIMUM	OPTIMUM	RANGE
LENGTH	520	750	520-750
BREADTH	400	500	400-500
HEIGHT	380	450	380-500

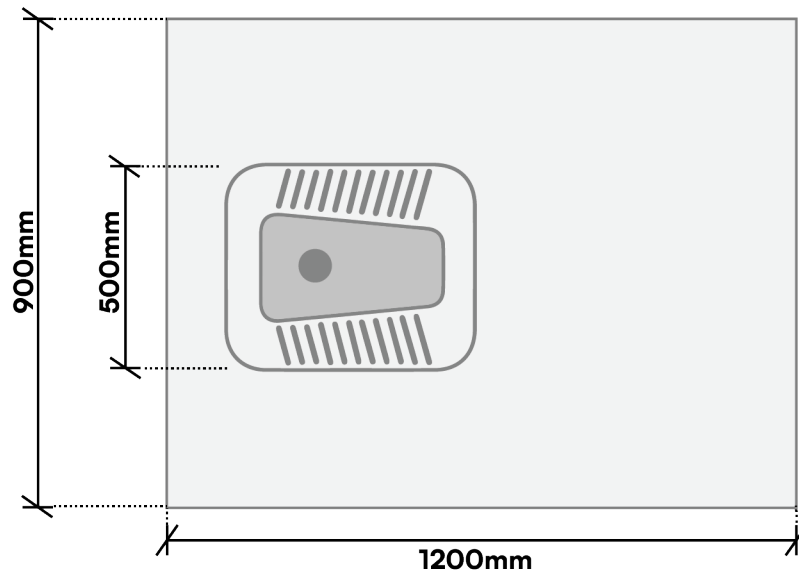
*All the measurements are in millimeters (mm).

Western W.C.**W.C (western)**

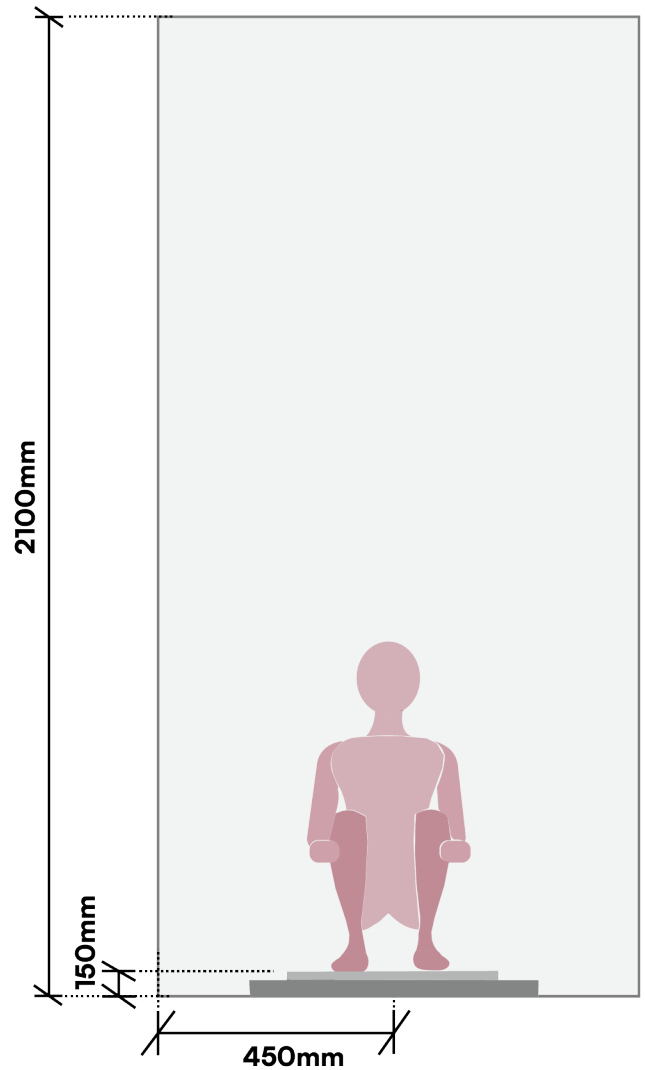
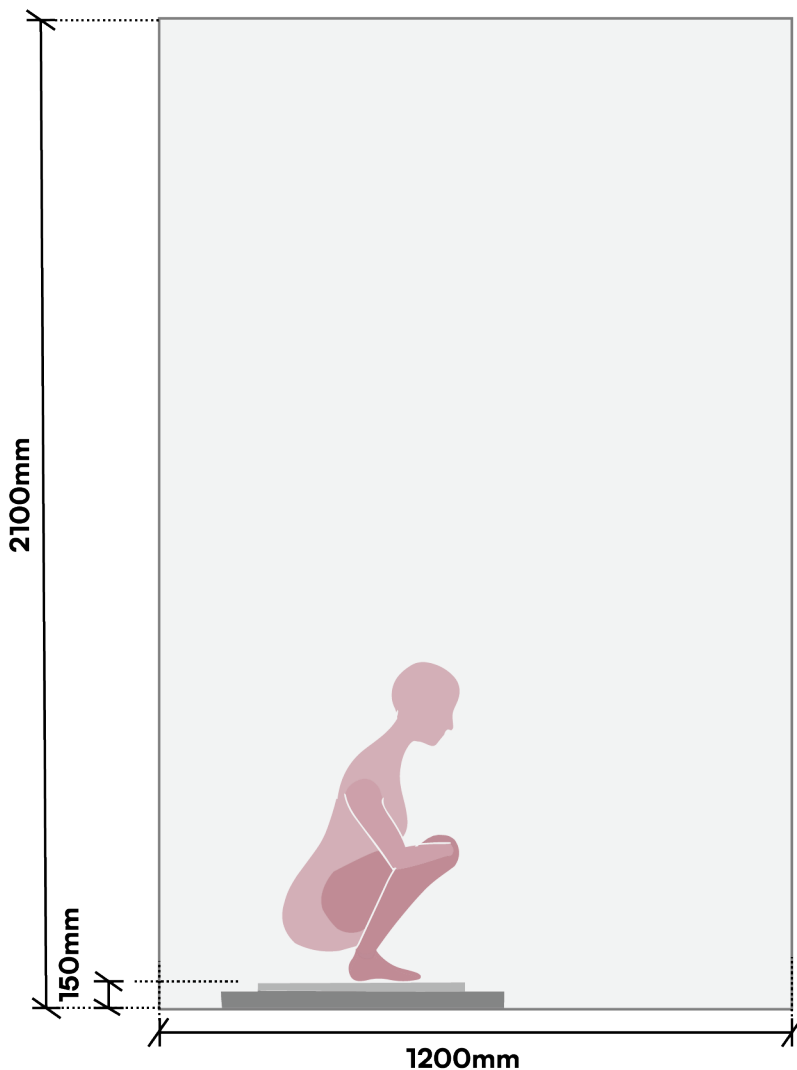
- ~ Wall mounted WC with P trap (to avoid water and waste clogging)
- ~ A tap with mug (for washing excreta)
- ~ A health faucet (for washing excreta)
- ~ A floor trap (for draining water)
- ~ Dustbin (for disposing waste)
- ~ Toilet paper (for cleaning excreta)
- ~ hooks (for users to hang their belongings)
- ~ Ventilation (to avoid suffocation)
- ~ The partition walls between the cubicles should not touch the floor and ceiling for cleanliness and ventilation purposes



*All the measurements are in millimeters (mm).

Indian W.C.**W.C (Indian)**

- ~ A tap with mug (for washing excreta)
- ~ A floor trap (for draining water)
- ~ Dustbin (for disposing waste)
- ~ Toilet paper (for cleaning excreta)
- ~ hooks (for users to hang their belongings)
- ~ Ventilation (to avoid suffocation)
- ~ The partition walls between the cubicles should not touch the floor and ceiling for cleanliness and ventilation purposes



*All the measurements are in millimeters (mm).

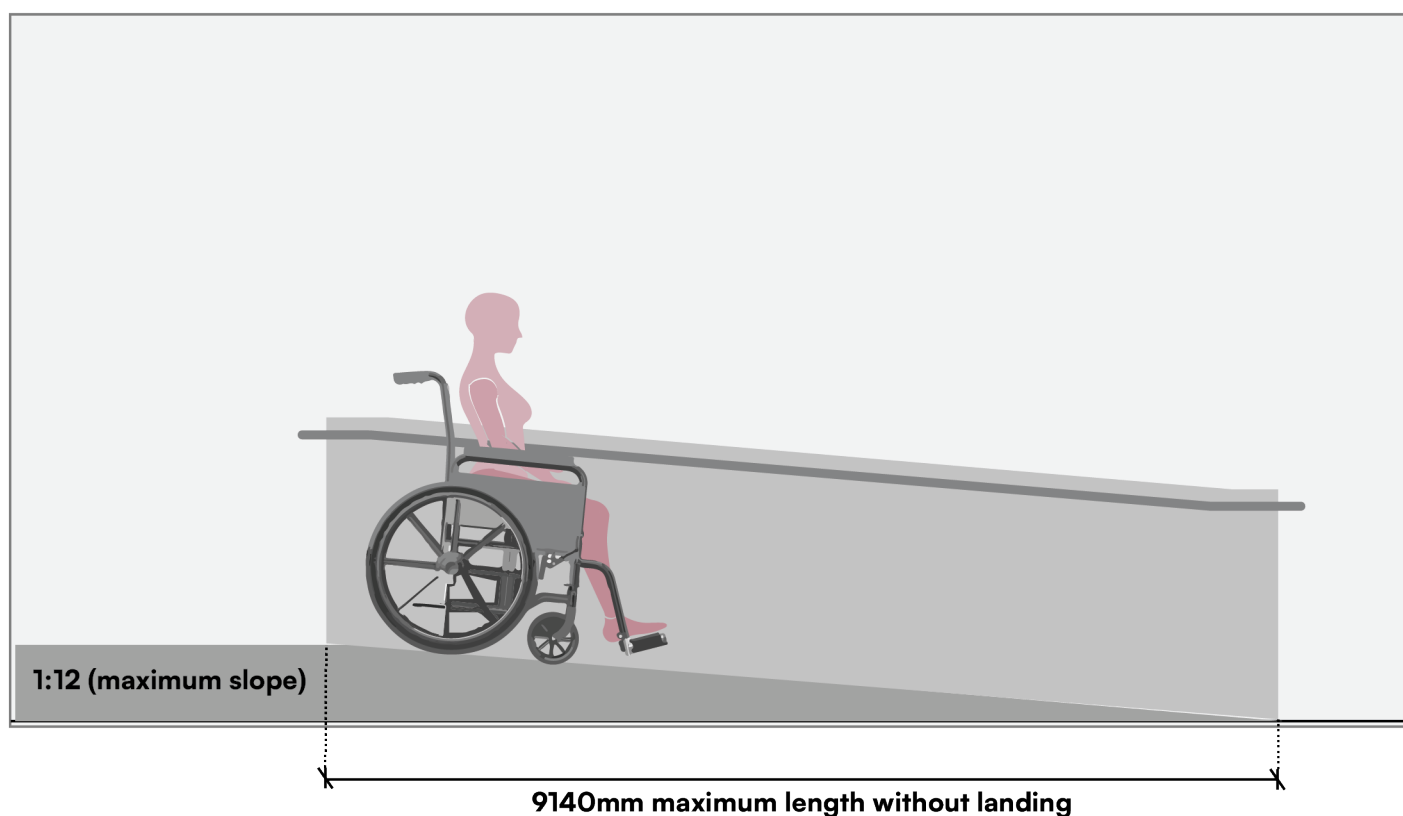
Toilet for differently-abled

CUBICLE FOR DISABLED	MINIMUM	OPTIMUM	RANGE
LENGTH	750	900	750-1200
BREADTH	900	1200	900-1500
HEIGHT	2100	2100	2100-2400

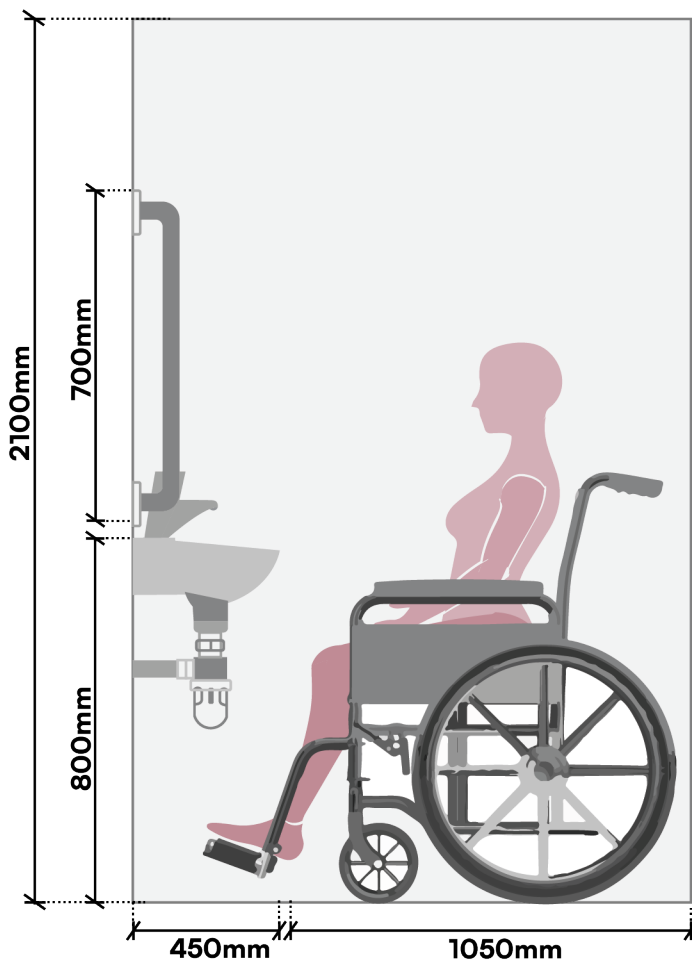
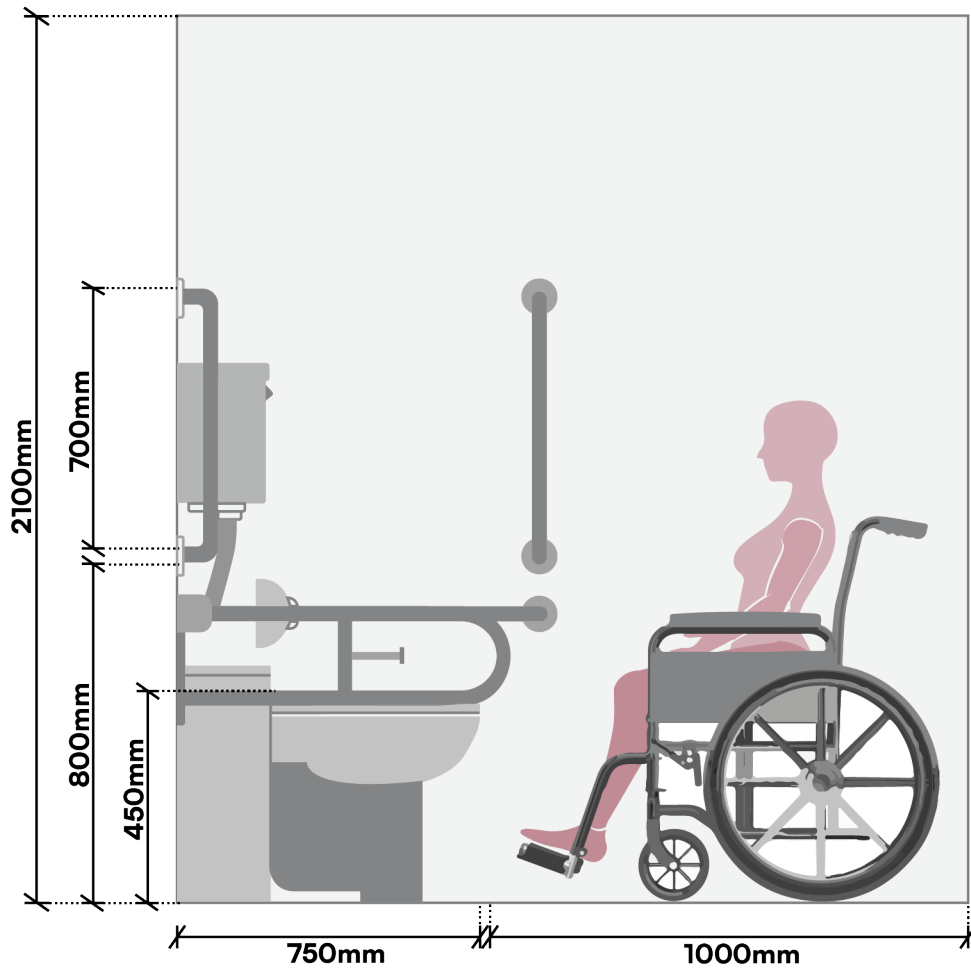
W.C. FOR DISABLED	MINIMUM	OPTIMUM	RANGE
LENGTH	520	550	520-750
BREADTH	400	450	400-500
HEIGHT	380	450	380-450

- Wall mounted basin (easier to clean the floor, has less chances of getting affected by bacteria)
- A Hand dryer (to dry up wet hands)
- A Soap dispenser (cleanliness purposes).
- Handrails for the disabled for easy movement.
- W.C (western)
- Wall mounted WC with P trap (to avoid water and waste clogging)
- A tap with mug (for washing excreta)
- A health faucet (for washing excreta)
- A floor trap (for draining water)
- Dustbin (for disposing waste)
- Toilet paper (for cleaning excreta)
- Ventilation (to avoid suffocation)
- Ramp (at the entrance for accessibility)

SINK FOR DISABLED	MINIMUM	OPTIMUM	RANGE
LENGTH	400	550	400-550
BREADTH	450	600	450-600
HEIGHT	800	850	800-900



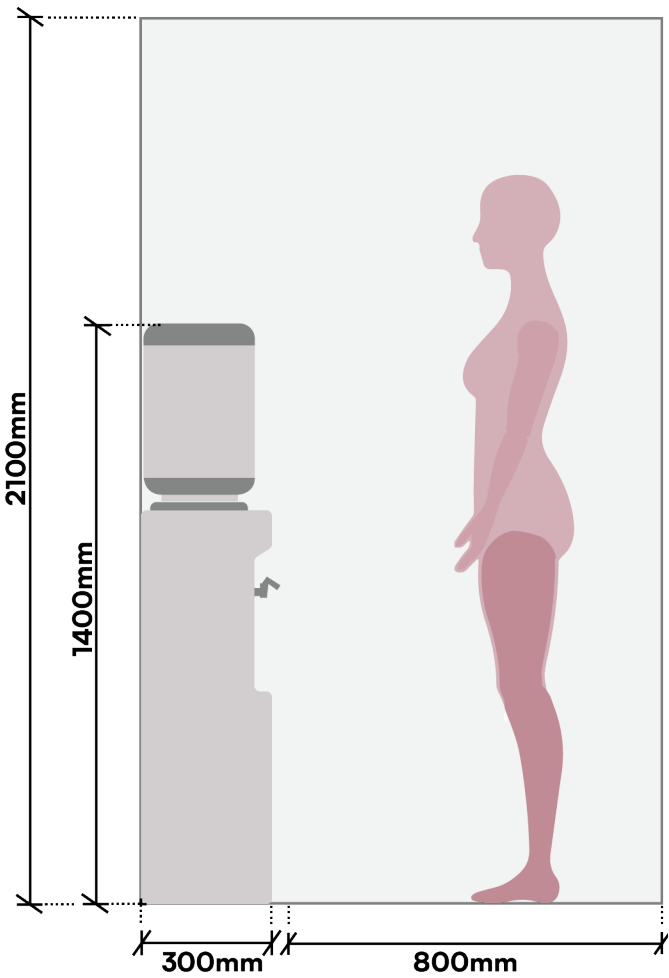
*All the measurements are in millimeters (mm).



- While working out the number of lavatories, one of the units shall be compulsorily designed for differently-abled
- For people using wheelchairs, additional space to maneuver, grab bars, sloped ramps with railings, doors, location height, and type of fixtures require different settings.
- The wash basin should be located near the entrance for easy access while wheeling out from the washroom
- A suitable arrangement of vertical/horizontal handrails shall be made inside the toilet which will assist the person using the washroom
- The toilet floor should have a non-slippery surface.
- Guiding steps near the entry should have a textural difference.
- Additional options for toilets for the physically differently-abled include adding a handicap bidet.

Water Dispenser

- Availability of drinking water is one of the basic requirements demanded by the users as well as the attendant
- The water dispenser is placed near the entrance for easy access by the users and the attendant

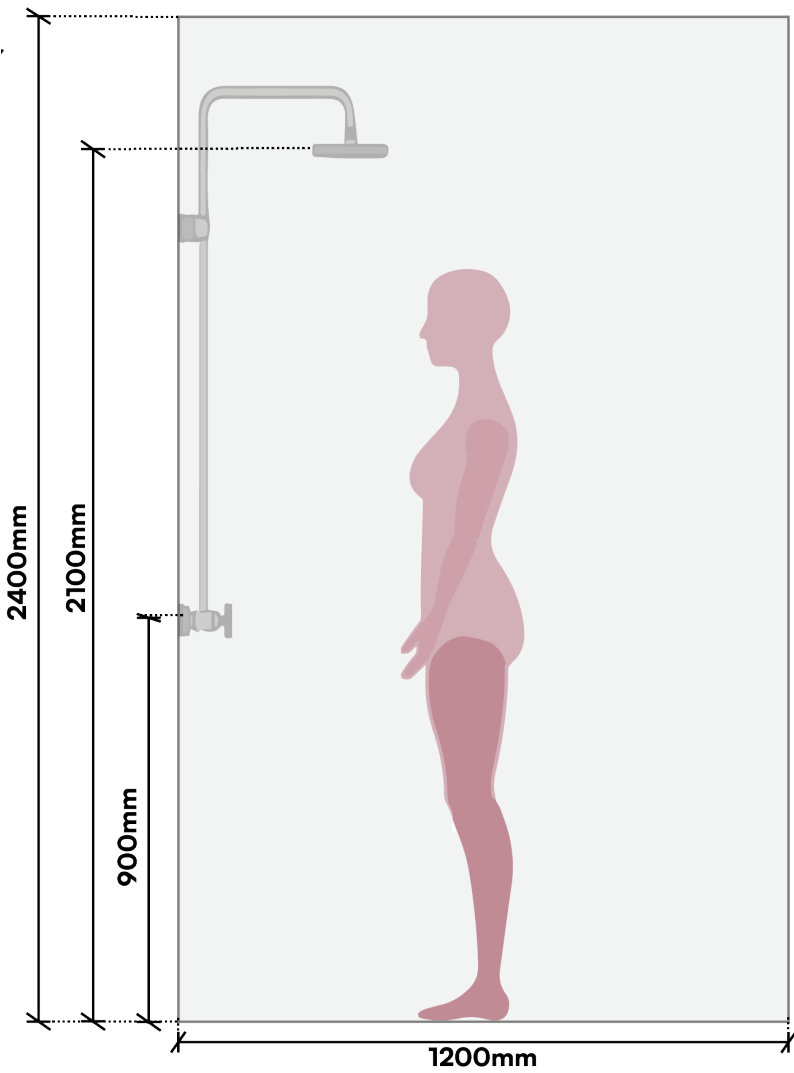


Bathing area

Bathing facilities should be provided as per the sizes mentioned in the norms. This facility remains optional in some toilets.

BATHING AREA	MINIMUM	OPTIMUM	RANGE
LENGTH	900	900	520-750
BREADTH	900	1200	400-500
HEIGHT	2100	2100	2100-2400

- Hooks (for users to hang their belongings)
- Ventilation (to avoid humidity)



*All the measurements are in millimeters (mm).

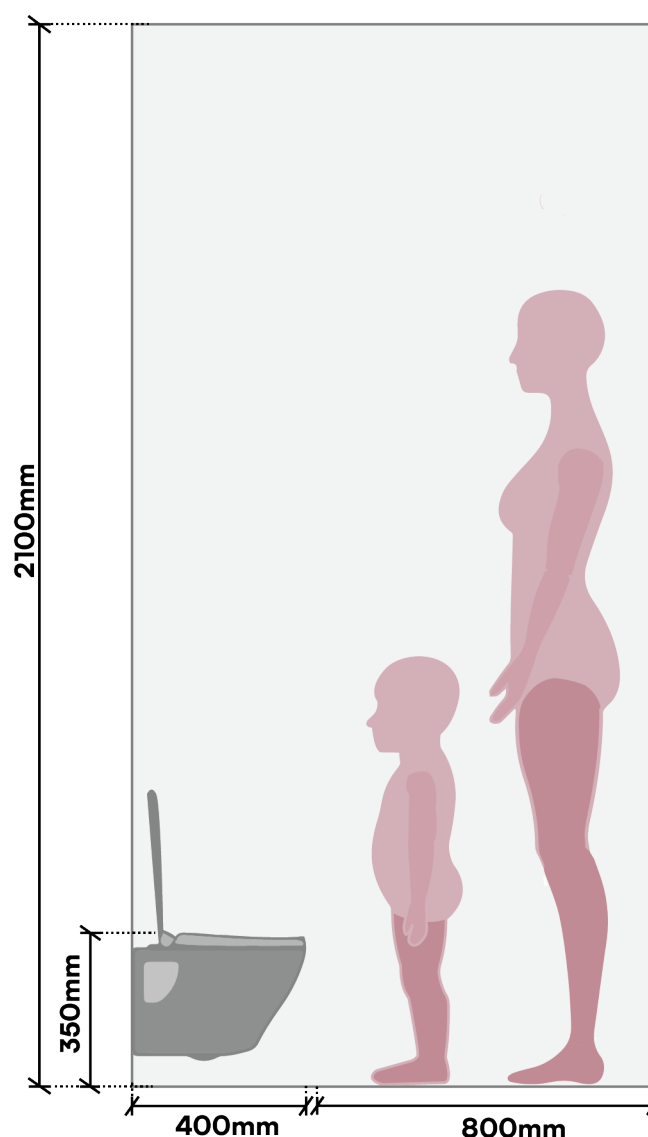
Cubicle for kids

- Small sized WCs are to be planned for children since their physiological disposition is different than that of an adult. It should preferably be in the women's section of the toilet facility.
- Half-height doors will help the mother to open the door from outside.
- Additional door fixtures at half the height of the normal doors should be planned since this would also help access for certain differently-abled users

CHILDREN W.C.	MINIMUM	OPTIMUM	RANGE
LENGTH	450	750	520-750
BREADTH	320	500	400-500
HEIGHT	300	350	300-400

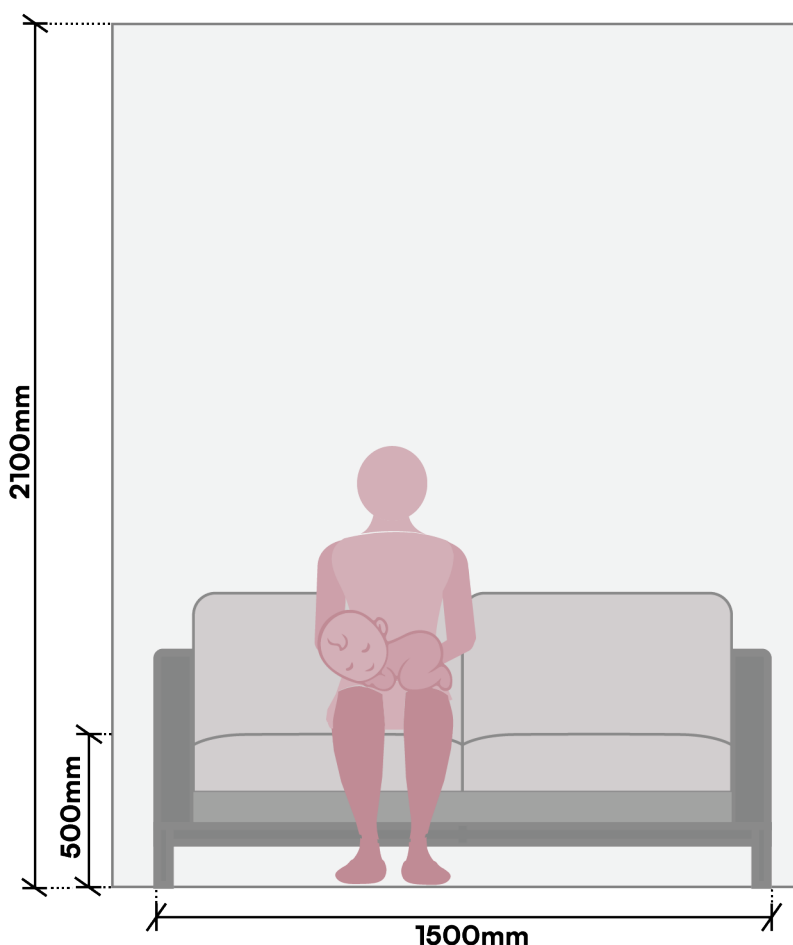
SINK FOR CHILDREN	MINIMUM	OPTIMUM	RANGE
LENGTH	400	550	400-550
BREADTH	450	600	450-600
HEIGHT	700	800	700-800

CHANGING ROOM	MINIMUM	OPTIMUM	RANGE
LENGTH	900	900	900-1200
BREADTH	900	1200	1200-1500
HEIGHT	2100	2100	2100-2400



*All the measurements are in millimeters (mm).

Breastfeeding Area



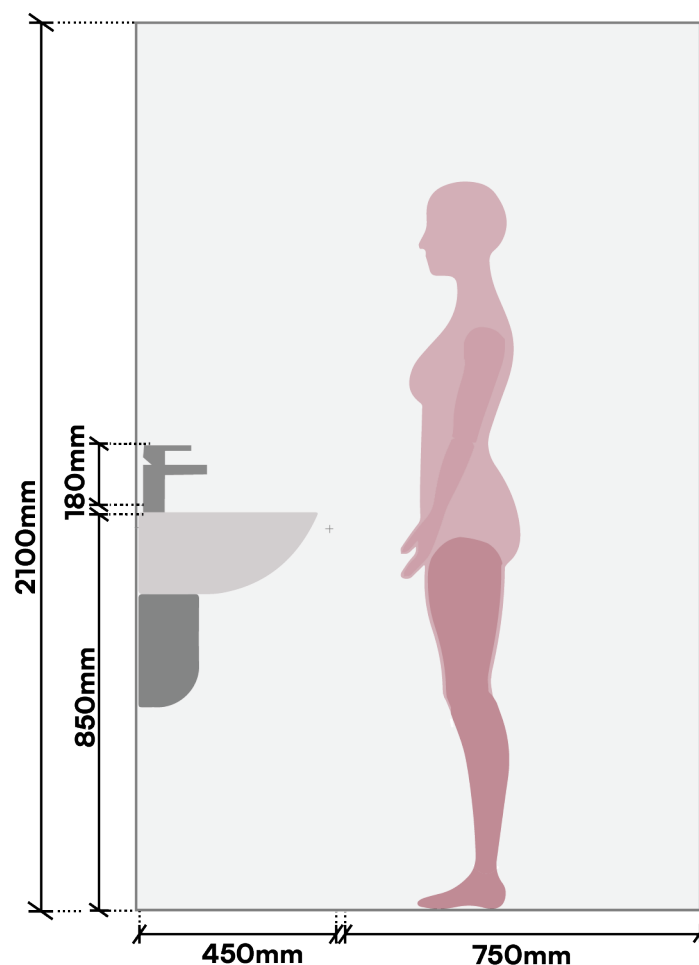
BREASTFEEDING AREA	MINIMUM	OPTIMUM	RANGE
LENGTH	900	900	520-750
BREADTH	900	1200	400-500
HEIGHT	2100	450	380-500

- Storage (To keep the stuff)
- Curtains (For privacy)
- Table (to change baby's clothes)
- Seating (for a mother to sit on comfortably and feed her child)

Washbasins

- Wall mounted (easier to clean the floor and has less chances of getting affected by bacteria)
- A Hand dryer (to dry up wet hands)
- A Soap dispenser (cleanliness purposes)

WASHBASIN	MINIMUM	OPTIMUM	RANGE
LENGTH	400	550	400-550
BREADTH	450	600	450-600
HEIGHT	800	850	800-900



Toilet for transgenders

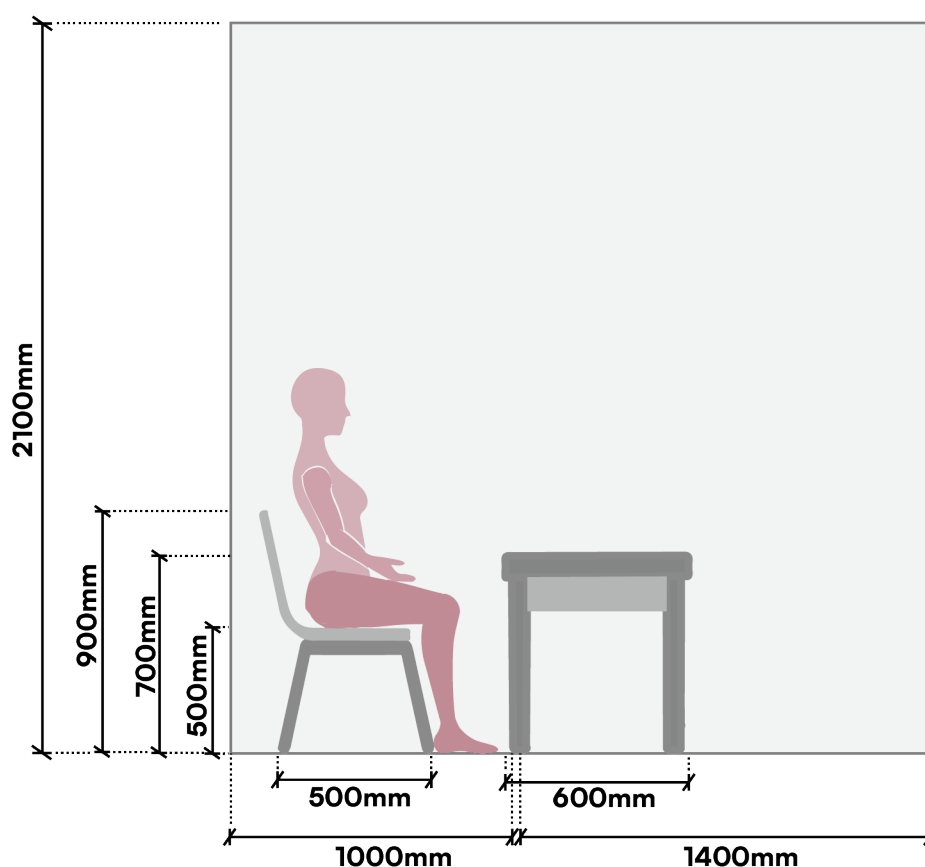
Toilets for transgenders can be stand-alone without clubbing with gender-based toilets. This facility is mandatory in Public Toilets located in crowded places like railway stations, and bus stands.

*All the measurements are in millimeters (mm).

Staff/Attendants room

- Provision of a room for the attendant/staff of the toilet complex is essential.
- It is even more significant in the case of Public Toilets located at railway stations, bus stands, and other areas which are open round the clock and have a high footfall.
- The location of the attendant area/room should preferably be at a position from where he/she/they can see and handle all the tasks from.

ATTENDANT AREA	MINIMUM	OPTIMUM	RANGE
LENGTH	520	750	520-750
BREADTH	400	500	400-500
HEIGHT	380	450	380-500

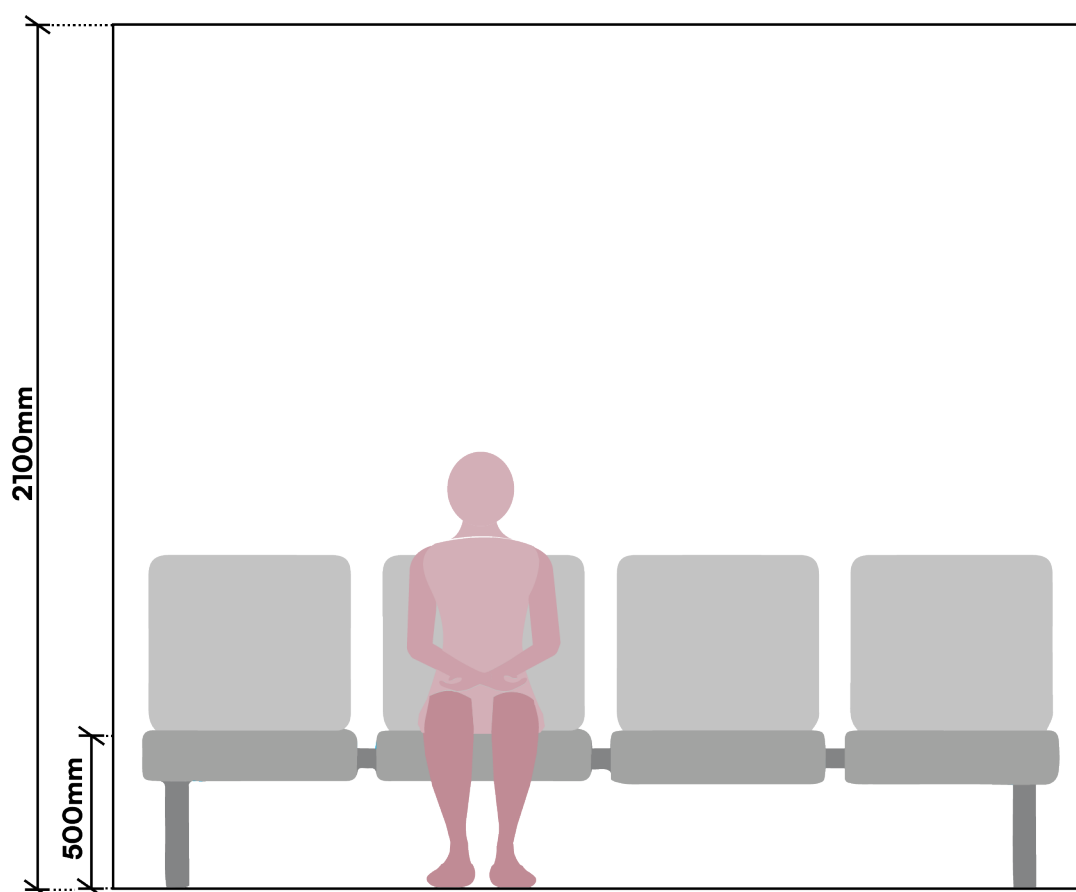


STORAGE ROOM	MINIMUM	OPTIMUM	RANGE
LENGTH	900	900	900-1200
BREADTH	900	900	900-1200
HEIGHT	2100	2100	2100-2400

Storage

One small room for storing cleaning materials/equipment is essential in all toilet complexes and is very crucial in the case of public toilets. The area occupied by the room can be decided depending on the volume of equipment required to be stored.

*All the measurements are in millimeters (mm).



Waiting area and circulation

- A waiting area/ circulation space must be provided for the persons waiting for their turn to use the toilet/ bath.
- Adequate space for waiting must be provided inside the toilet so that women don't become subject to sexual harassment outside the toilet.
- Circulation space must be kept open to the sky for good ventilation and light.

WAITING AREA	MINIMUM	OPTIMUM	RANGE
LENGTH	500	550	500-600
BREADTH	1600	2400	1600-2400
HEIGHT	450	500	450-500

Women-specific facilities

Sanitary napkins:

It is recommended to provide Sanitary napkin vending machines in Public Toilets in transit areas (Airports, Railway Stations, Bus Stands, etc). To facilitate the selling of sanitary pads in the toilet facility, a partnership with sanitary napkin manufacturing company or a women's groups that make sanitary pads can be looked upon.

Sanitary bins:

In each cubicle, covered sanitary bins for proper disposal of sanitary napkins must be provided. Include signs reminding women to put their feminine items in the sanitary bin rather than the toilet.

Disposal of sanitary napkins:

There should be a provision for the disposal of used sanitary napkins. The used napkins should be disposed off safely with the help of a local biomedical waste collection & disposal agency.

*All the measurements are in millimeters (mm).

Accessories & Provisions

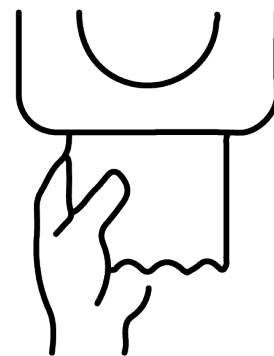
Hand Wash and Mirrors

- Hand wash basins, toilet pans and traps, and foot rests, among other sanitary and water supply fixtures, must be provided in standard designs.
- Both women's and men's blocks should have wash basins with mirrors.
- The tap shape and design should be such that it is easy to clean.
- During activation, the water pressure and tap / washbasin position should not allow water to splash onto the user's body.
- The vanity top-cum-wash basins should be positioned outside the toilets for everyone's usage to keep the floor dry.
- Electronically controlled taps can be seen as a way to save water. Sensor controlled taps, with their precise low settings and positive shutoff qualities, are an efficient way to provide enough water.



SOAP DISPENSERS

Next to the wash basins, liquid soap dispensers, paper towel dispensers or hand dryers, towel rails, and litter bins should be put. The soap dispenser should have a cleaning and restocking mechanism.

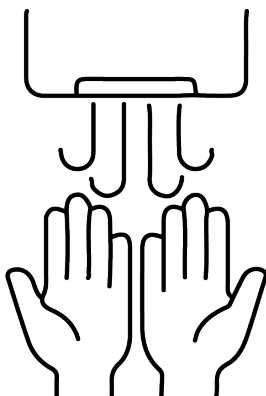


WASTE AND REFUSE BINS

Bins are to be provided within all toilet cubicles subject to space availability, or alternately adjacent to the wash basin. The bins given must not be operated by hand, but rather by foot, motion sensors, or other approved means.

TISSUE DISPENSERS

A toilet paper roll could be placed in each toilet cubicle. This minimizes the exposure to touching facilities after ablutions.



HAND DRYING EQUIPMENT

In women's units, at least one hand dryer blower must be available. A paper towel dispenser or paper rolls could be placed next to the wash basin as an alternative.

AIR FRESHNERS

"Aromatic air fresheners shall be accessible for use after cleaning following the cleaning cycles when odor issues arise. Air freshener spray facilities could be a viable option, but they must be strategically placed to avoid direct human contact.

TOILET AND URINAL SANITIZERS

Pest cakes, tablets, liquid sanitizers placed directly into receptacles without interfering with operations is a possibility. Sanitizers must be put in to prevent direct contact with the water supply system. The sanitizers chosen must not be corrosive or harmful to the cleaning crew's health.

GENERAL DESIGN CONSIDERATIONS

Toilet facilities should provide hygienic, safe, accessible, convenient, and clean facilities to the public while offering sufficient privacy to perform personal sanitary functions. This section outlines the design considerations when planning new facilities. The main aspects for design are accessibility, external structure, interior design, infrastructure, facilities, and accessories. All aspects at the same time need to be taken into consideration, but their relative importance depends on local conditions and preferences.

LOCATION CONSIDERATIONS

Location is extremely important in ensuring that the toilet facilities are easily accessible and maximizes the number of users. Public toilet facilities should be located at a walking distance from activity generating areas which could be markets, restaurants, factories, offices, etc. It is to be noted that all public toilets should be available in a distance of 1km in all commercial areas.

Public toilets should be closely located to heavy footfall generating areas for the convenience of women, children and differently abled. It is also important that the public toilets are not located in areas which may be considered as unsafe like near liquor shops or areas with less street lights. Adequate consideration should be given to providing a clearly defined, accessible and safe pedestrian path to the toilet facility, including ramps. The path must be well lit to ensure that the user's personal safety is not compromised, particularly for women and adolescent girls. The toilet facilities must be located in places that it is highly visible from a distance.

To improve visibility of the facility, some options include:

- It is best to locate the entrance door facing the busiest areas and visible from most angles near footpaths, vehicle parking lots, roads, and bustling streets.
- To increase visibility, bright facades need to be used.
- Ensure that the surrounding vegetation (shrubs or trees) do not cover the toilet facility.
- As far as possible follow uniform colour codes and standard design language for easy recognition.

SIGNAGE AND DISPLAY

Appropriate direction signs are needed to ensure that users are aware of the location of the toilet facilities and distance to access them. It is essential that there is signage in front of or close to the public toilet in order to indicate or inform the users of the facilities available. Common locations for display of direction signs are main junctions, busy areas and road margins.

Signage should use appropriately sized fonts in dark colours against a contrasting light background in order to be easily read. Universal signs of a man, woman and person in a wheelchair should be placed at the entry and passageways. Reflecting surfaces could be used in order to make a sign easily visible at night.

Within the toilet facility premises display boards indicating the type of facilities available telephone numbers of maintenance agency, helpline numbers, user charges, toilet operation timings, responsible staff details must be put up. These should be preferably located next to the light source and the text used shall be in red colour on light yellow or green background for night visibility. Other types of messaging like proper use of toilets, health benefits can also be displayed within the facilities in order to make aware and educate the users.

SECURITY

Entry and exit doors and windows should be locked during toilet closures. Locks and deadbolts prevent access to any toilet infrastructure inside the toilet and subsequently help reduce vandalism.

For toilets to be safe, the caretaker/cleaner should have unrestricted access from his usual workstation. In single storied buildings, the critical access to the roof should be curtailed and should only be accessible through ladders under the control of the caretaker. Access shall be restricted to all areas not intended for public occupancy or not used by fixtures.

Separate sections for men and women-

The toilet facilities must have separate entrances for men and women which lead them to their respective sections of the facility. This design component is essential to ensure privacy and safety for women.

Toilet entry and visual intrusion

The entrance to the toilet facility must be designed such that it allows easy access for people. Design and layout of the toilet facility should consider needs of women, small children, aged, infirm and differently abled. Simple design elements to increase accessibility are ramps, lower elevation and plinth heights, height of steps, etc. ht of the main entrance.

INFRASTRUCTURE

Water supply and storage arrangements

Availability of sufficient water in a PT / CT is essential for its efficient operations and maintenance. It is also essential to ensure that users practice good personal hygiene. Water requirement for the facility may be worked out and enough storage for half day operation is to be kept in storage. If municipal water supply is reliable, the toilet blocks may have underground sump that can store half a day's requirement and overhead tanks for another half. If municipal water supply is not available, toilet block may have its own bore well and pump with no underground sump. It should have standby pumping facility. There should be proper arrangement to keep the pump covered to save it from dust and water. A pump house may also be provided where required



PLUMBING

PIPES

It is recommended that all the internal water and drainage pipes should be concealed to avoid physical contact as it is more prone to damage and spread of diseases. The suitable pipes considering the usage of a public toilets as well as considering factors like cost, durability, chemical and extreme temperature resistance are

PPR (Polypropylene Random Copolymer)

With easy installation, hygiene, brilliant and smooth inner surface, easy to install and lightweight, PPR is the ideal indoor alternative to cold galvanized pipes for all hot systems.

The PPRC Pipe and fittings are produced with high quality raw material.

Where the PPR Pipe and Fittings is used?

The characteristic role of raw material on pipe industry is high resistance on heat and chemicals. The raw material of PPRC is essential key for hot and cold water system on PPR Pipe and fittings. Moreover, it provides features to protect odor and taste on fluid. With the favorable pressure and heat, the lifetime of PPR Pipe and fittings may be more than 50 year.

Characteristics -

- 1 With 20 °C and 25 ATM pressure, 50 year lifetime.
- 2 It is suitable among. 20 ° C and +95 ° C
- 3 It is durable due to these reasons.
- 4 High resistance to chemical substances.
- 5 Brilliant and smooth inner surface
- 6 The color, odor and taste of water do not change.
- 7 Provides heat and sound insulation.
- 8 There is no diameter twist on fittings. This provides maximum performance
- 9 Up to 70% savings on installation and installation
- 10 Environmentally friendly



CPVC (chlorinated polyvinyl chloride)

CPVC or Chlorinated Polyvinyl Chloride pipe fittings are manufactured using CPVC compounded material. It is one of the most strong and long-lasting materials utilized in piping applications for over 50 years now. CPVC is resistant to most aggressive chemicals and can withstand high temperature and pressure, consequently making it an ideal material for residential, commercial, and industrial piping and fire sprinkler applications.

Where the CPVC Pipe and Fittings is used?

CPVC pipe fittings are used in industrial plumbing for chemicals. They are used in the transportation of chemicals and hot corrosive fluids that includes a wide range of inorganic acids, bases used in chemical processing.

CHARACTERISTICS -

High glass transition temperature
High heat distortion temperature
Chemical inertness
Outstanding mechanical, dielectric, and flame and smoke properties
Relative low cost to manufacture and install
Excellent chemical resistance
Excellent retention of physical properties at higher temperatures
Weather resistant
High heat distortion temperature
Self extinguishing
Low flame and smoke characteristics
Weldable and Machinable
ideal for hot and cold water distribution
They are used to carry drinking water and food liquids



NATURAL LIGHTING

A softer, friendlier environment can be created using natural lighting. The design should incorporate elements for ample direct sunlight during the day covering at least half the toilet space. Good natural lighting also helps in reaching or finding difficult to clean areas.

ELECTRICITY

- Availability of electricity is an important component of any PT / CT facility. Adequate lighting at all times and especially during the night hours is crucial for ensuring that women and adolescent girls can use the toilet facilities 24X7 and feel safe.
- Adequate lighting should be provided both in the interiors and exterior of the facility.
- Toilet cubicles must be lit well.
- The gate of the toilet facility must also be provided with adequate lighting.
- The access to all the electrical appliances should be near the seating area of the staff.
- It is important to find ways to save electricity or conserve energy. For eg - Using one single light to light up 2 toilet cubicles.

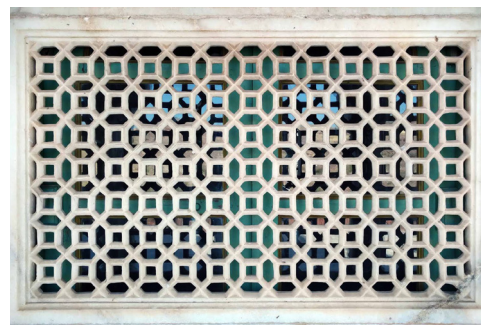


In order to save energy, The following has been recommended - **LED LIGHTS**

- LEDs generally consume very low amounts of power.
- The number one hazard when it comes to lighting is the emission of heat. LEDs emit almost no forward heat while traditional bulbs like incandescents convert more than 90% of the total energy used to power them directly into heat.
- Their small size makes LEDs incredibly adaptable to an infinite number of lighting applications.
- LEDs generally have very high (good) ratings when it comes to CRI - measurement of a light's ability to reveal the actual color of objects as compared to an ideal light source (natural light).
- Because LEDs are so small they can be used in virtually any application you can think of. They can be combined in bunches for a traditional bulb, used in isolation as a small device light, or strung out in sequence in a linear fashion.
- LEDs are solid state lights. This means that the traditional glass bulb surrounding the light is entirely unnecessary.
- LEDs turn on and off instantaneously. There is no warm-up period like in the case of metal halide lamps.
- LEDs do not have the environmental issues common to traditional lighting solutions
- LEDs operate on very low voltages.

NATURAL VENTILATION

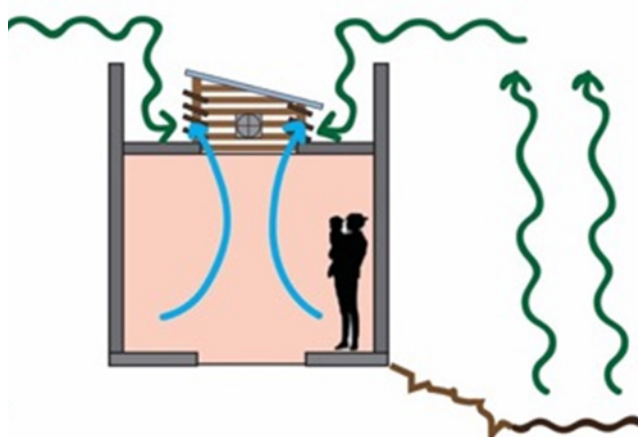
Natural ventilation of an occupied space should be through windows, doors, louvers or other openings to the outdoors. Good design helps in careful positioning of windows, ventilators, louvers, openings to the outdoors, etc. to allow for free air movement inside the toilet without compromising the privacy. The operating mechanism for such openings should be provided with access so that the openings are controllable by the building occupants and securable in the event the public toilet room must be secured from vandalism. Adding of jalis on the windows and doors could be a good option to make the space natural ventilated.



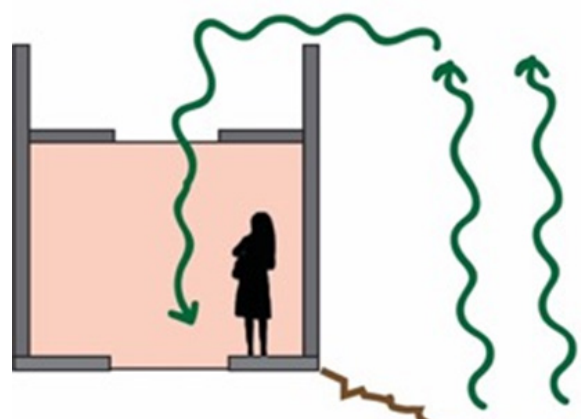
MECHANICAL VENTILATION

If mechanically ventilated, the air exchange rate should have a minimum of 15 air changes per hour or 35.4 L/s (75 cfm) exhaust per toilet cubicle. Suitable replacement air should be provided for exhaust systems to ensure a slight negative pressure within the public toilet. The replacement air may be taken directly from the exterior, or from adjacent spaces that are permanently air-conditioned or naturally ventilated.

The exhaust system should dispel the air directly outdoors without causing any nuisance to neighbouring premises. The exhaust air should be discharged to the exterior of the building at a position at least 2 meters (6 feet) above the exterior surface level and at least 5 meters (16 feet) from any opening into the building where the discharge air may re-enter the building such as windows, doors or air intakes.



BEFORE



AFTER

MATERIAL AND FINISHES

Wall

Porcelain Tiles

Since they are durable, easy to clean, stain and scratch resistant and waterproof, making them ideal for public toilets.



Ceramic Tiles

Ceramic tiles are hygienic, do not stain, and are easy to maintain.

Ceramic is one of the easiest materials to clean and disinfect because it does not encourage the growth of bacteria, does not decay, is waterproof, non-absorbent, and does not promote the growth of bacteria.



Flooring

Vitrified Tiles

Vitrified tiles, as they are strong and durable with matte finish which prevents slipping on the floor.



Kota Stone

It is not water absorbent and is anti-slip. It is also extremely durable and long-lasting. If a new appearance is desired, the stone can be polished again. Kota is resistant to many types of weather, including dry, humid, and cold.



Storage

Stainless Steel

This metal is resistant to corrosion, rust, and water stains, among other things. This also makes the metal suitable for applications involving temperature and pressure extremes.



Doors

PVC

PVC doors are indeed durable and robust. These doors do not rust and warp and hence are a good option for wet areas



Partition Walls

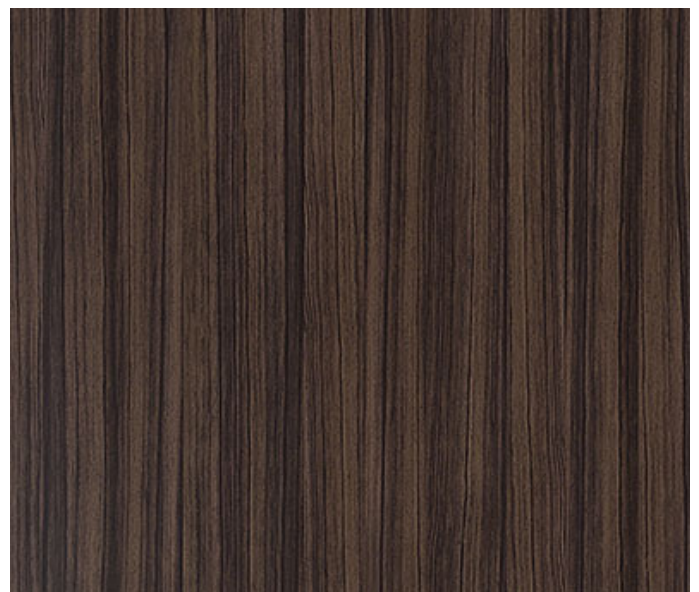
FRP

FRP (fiberglass reinforced panel) for the cubicle as it is lightweight, stain resistant and waterproof with a flexible design



HPL

HPL boards are the best choice for washroom partitions as they are waterproof, stain proof are easy too clean and maintain, durable and affordable



Paint

Eggshell Finish

Eggshell paint finish for walls, as it is resistant to wear and tear. The lustrous finish also allows light to reflect, making the space look spacious.



Taps

Brass Taps with Chrome Plating

They won't rust, are durable and resistant to wear and tear. The foam flow attachment saves water and gives a satisfactory feeling to the user



Window

Louvered

these are designed to regulate airflow or light penetration while keeping the privacy of the user intact



Cement window with jali

It provides adequate light and ventilation while also maintaining the users' privacy and offering an attractive appearance.



Washbasin

Granite

Granite, since it is durable, porous and stain resistant. Also, its grey colour will not make it look dirty



Ceramic

Ceramic is extremely durable and resistant to wear, and it responds effectively to any impact. It deteriorates at a lower rate than practically all other materials. It can be cleaned with solvents without causing any damage.



WC

Ceramic

Ceramics are strong, affordable and easy to maintain hence they are a good choice for a washroom.



BRANDING

What is branding?

Branding is a combination of visual and verbal communication that distinctly identifies a company, product or service. It is the act of combining features such as a logo, design, mission statement, and a consistent theme throughout all marketing communications to create a strong, favorable perception of a company, its products, or services in the minds of customers.

BRAND VISION

The first step in developing a brand is to have a vision for it.

The direction of a brand and what it intends to achieve in the future is referred to as brand vision. It's based on the core branding, but it encompasses a lot more than simply the present.

When defining a brand's mission, there are four questions to consider:

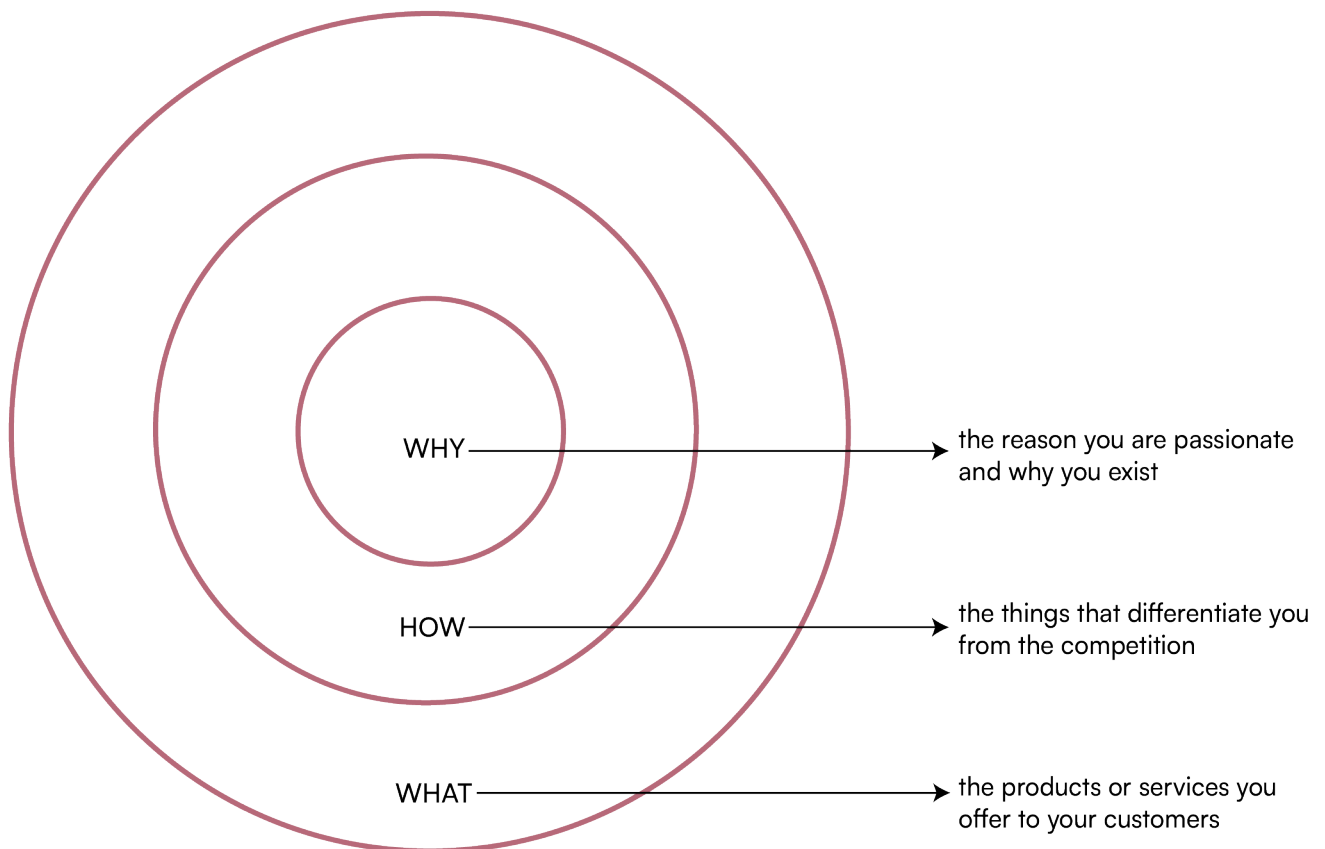
Why does the brand exist?

What makes the brand unique?

What kind of issues does it deal with?

The Golden Circle concept by Simon Sinek can be a way to identify the purpose of the brand:

For example: Golden circle for pink toilet



Unique Brand voice

The brand voice is dependent on the company's mission, audience, and industry. It's how it communicates with its customers, and how they respond to it.

For example: Brand voice for pink toilet

Safe

Clean/hygienic

Socially inclusive

Female Friendly

Trustworthy/ Reliable

Easily Accessible

Interactive

Informative

*Choosing a brand voice that makes sense and resonates with the target user is crucial for the brand.

Brand logo & tagline

The most exciting (and the most important piece) of the brand building process, is to create a brand logo and tagline for the company. The logo appears on everything that relates to the business. It becomes the identity, calling card, and the visual recognition of the brand's promise.

The following items should be included in a strong brand style :

Colour palette

Visual perception is the primary sense humans have for exploring and making sense of their environment. One of the most important factors in increasing the value of your brand has been your perception of color. Certain hues elicit universal emotional responses.

For example: Color palette for pink toilet

This Color Palette has been derived to take forward the concept of "Pink Toilet" and to keep the brand true to itself. Different shades of pink represent sentimentality, romance, tenderness, care, and calmness. It also symbolizes energy, youthfulness, fun, excitement, strength and confidence.



RGB = 204 R, 0 G, 102 B
 RGB = 237 R, 6 G, 119 B
 Both are shades of Rani Pink

Typography and fonts

A big aspect of a brand's identity is typography. A variety of typography can be found in a brand's logo, packaging, emails, papers, website, and social media pictures. It, like the colors, gives the brand meaning by communicating the brand's values and tone. Because typography and typefaces are such an important aspect of a brand's visual identity, they have an impact on how people perceive and remember it.

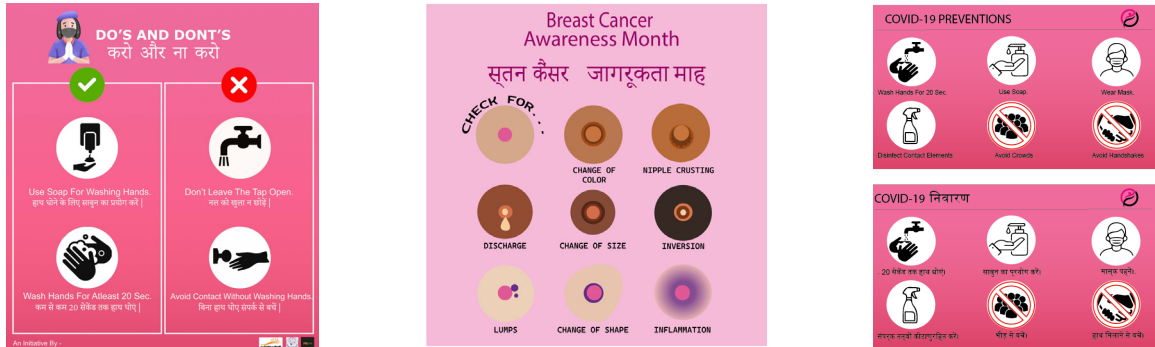
It's crucial to experiment with several sorts of typefaces to see what works best and what the user can relate to.

Integrate your brand into every aspect of your business.

The brand should be visible and reflected in everything that their customer can see, read, and hear.

Creating Awareness

Apart from raising knowledge of the brand's identity, it's also critical to raise awareness of the brand's mission. One of the goals of Pink toilet, for example, is to raise awareness about female hygiene. This can be accomplished by distributing posters with pertinent information.

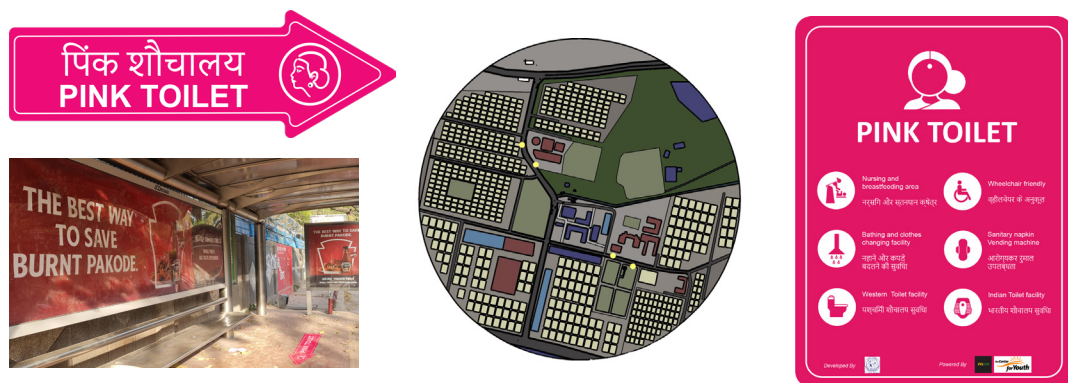


Wayfinding

Wayfinding design combines signage and map design, symbols, color, and typography to effectively navigate people through a space. It is especially significant in constructed environments because it gives visual signals to help people find their way to their destinations.

Wayfinding raises brand recognition and visibility in order to capture attention and interest. It influences a person's knowledge of—and experience with—a physical environment by supporting, shaping, and strengthening branding through signage, graphics, and art.

Wayfinding establishes a logical flow of information to greet and guide visitors from the moment they enter the property—across the street—until they leave



Accessibility and visibility

Accessible branding helps in explaining how customers' problems may be solved. Making a brand accessible and establishing a visual presence lets users to comprehend what the company has to offer, which in turn helps the brand get users.

APPENDIX



To understand the overall view of the study, it is important to research and study the topic on all levels which leads from Global, moves on to National and then at last cover the Local. It will help us identify that how problems throughout the globe are dealt with on a smaller scale.

RESEARCH AND CASE STUDY

GLOBAL

UNICEF: Female-friendly toilets need to be safe, private, accessible, affordable and well managed, cater for menstrual hygiene management and meet the needs of caregivers.

Female-friendly public and community toilets must:

- Be safe and private: be in a safe location; have a clearly marked female toilet section with a separate entrance; have good lighting; have trained male and female attendants; have robust, private cubicles.
- Cater for menstrual and other hygiene requirements by providing: water and soap; hooks, shelves and mirrors; access to menstrual products; means for washing and/or disposal of menstrual products.
- Be accessible to all users: be at a reasonable distance from homes or activity centres; be reachable via an accessible path; have at least one cubicle accessible to all users.
- Be affordable and available when needed: have enough cubicles to avoid long queues, which means allocating extra space and cubicles for women; be open when needed; have an affordable tariff or be free.
- Be well maintained and managed: have adequate management arrangements, cleaning and maintenance budgets; have safe management of faecal, liquid and solid waste.
- Meet the requirements of caregivers and parents: have a baby changing station.

Principles for Implementation of Sanitation Intervention (WHO)

- Toilet design, construction, management and use should ensure that users feel that they are in a safe and hygienic environment.
- The toilet slab and pan or pedestal should be constructed using durable material that can be easily cleaned.
- The toilet superstructure needs to prevent the intrusion of rainwater, stormwater runoff, animals and insects.
- It should provide safety and privacy with lockable doors for shared or public toilets.
- Toilet design should include provision of culturally and context-appropriate facilities for cleansing, handwashing and menstrual hygiene management.
- Toilets need to be well maintained and regularly cleaned.

Containment — storage/treatment

- Where groundwater is used as a drinking-water source, a risk assessment should ensure that there is sufficient vertical and horizontal distance between the base of a permeable container, soak pit or leach field and the local water table and/or drinking-water source (allowing at least 15m horizontal distance and 1.5m vertical distance between permeable containers and drinking-water sources is suggested as a rule of thumb).
- When any tank or pit is fitted with an outlet, this should discharge to a soak pit, leach field or piped sewer. It should not discharge to an open drain, water body or open ground.

Conveyance

- Wherever possible motorised emptying and transport should be prioritised over manual emptying and transport.
- All workers should be trained on the risks of handling wastewater and/or faecal sludge and on standard operating procedures (SOPs).
- All workers should wear personal protective equipment (e.g. gloves, masks, hats, full overalls and enclosed waterproof footwear) particularly where manual sewer cleaning or manual emptying is required.

Treatment

- Regardless of the source (i.e. wastewater from sewer-based technologies or faecal sludge from on-site sanitation) both the liquid and solid fractions require treatment before end use/disposal
- The treatment facility should be designed and operated according to the specific end use/disposal objective and operated using a risk assessment and management approach to identify, manage and monitor risk throughout the system.

End use/disposal

- Workers handling effluent or faecal sludge should be trained on the risks and on standard operating procedures and use personal protective equipment.
- A multi-barrier approach (i.e. the use of more than one control measure as a barrier against any pathogen hazard) should be used.

01

WHAT



What was the case?

- There is a disparity in access to public sanitation in Nairobi where communicable diseases like Cholera and Dysentery affect many every year.
- 30% of females report suffering from diarrhoea every 2-3 months, UTI and haemorrhoids are also common due to urine and faeces retention.
- 68% of women reported experiencing violence using washrooms at night, away from home without lights and locks.

Why was this initiative taken?

- The aim of this research was to develop a better understanding of women's daily and nightly sanitation practice and shed light on the issues pertaining to women's health.
- The research was initiated by the IRB at Rutgers University and NACOSTI review board.
- It was funded by NSEP & PEO international.



02

WHY

03

STEPS TAKEN



What steps were taken?

- Recent solutions and interventions to improve the situation have failed as they did not consider women's sanitation needs and concerns.

What were the inferences?

- The case study highlights the problems within the region. While no specific solutions were put forward, the surveys & the responses by the women give us several suggestions as to what can be done.
- Safe location near the residential areas, adequate lighting, and functional locks are important.
- Proper disposal and drainage facilities, permanent female guards or staff, self cleaning toilets, low maintenance surface etc can be taken forward.



04

INFERENCES

NATIONAL: GOVERNMENT OF INDIA

General design considerations

Public and Community Toilets should provide clean, safe, accessible, convenient, and hygienic facilities to the public at a level of privacy adequate to perform necessary personal sanitary functions.

This section outlines the design considerations while planning new PT/CT facilities. The key design considerations are *accessibility, external structure, internal design, infrastructure, facilities and accessories*.

While all aspects need to be mandatorily designed for, their relative importance is governed by local conditions and user preferences.

- Gender considerations
- Location considerations
- Number of toilet facilities /units
- Soil
- Water Table
- Terrain & Topography



External Elements

Accessibility is a key attribute for ensuring that toilet facilities are used by all. Accessibility is defined in terms of location and visibility of the toilet facility (signage to guide users to locate the toilets).

1. Location and visibility
2. Signage and display boards
3. Aesthetic appearance
4. Landscaping / Horticulture / Gardening
5. Graffiti proofing
6. Security and restricted access

Access

- **Separate sections for men and women:** The toilet facilities must have separate entrances for men and women which lead them to their respective sections of the facility. This design component is essential to ensure privacy and safety for women. The design must also include a waiting area for women where

they can queue up in case the WCs / bathing areas are occupied. It is preferred to create access so that men avoid crossing the women section of toilet.

- **Toilet entry and visual intrusion:** The entrance to the toilet facility must be designed such that it allows easy access for people.
- Design and layout of the toilet facility should consider the needs of women, small children, aged, inform and differently abled. Simple design elements to increase accessibility are ramps, lower elevation and plinth heights, height of steps, etc.
- The entry, passages and cubicles to PT / CT facilities shall be so considered and designed to allow entry and exit without making physical contact with surface like walls, doors or people.
- Occupants in waiting areas shall not have visual access to those inside the toilet. Toilets, cubicle, mirrors etc. are generally planned to view away from the line of sight of the main entrance.

Facilities

- The internal design considerations are the most crucial for ensuring acceptability and usage.
- The designs shall consider diverse sanitation needs of different user groups (women, children, aged and infirm, differently abled and transgender persons) without compromising safety and privacy at all times.
- Toilet Cubicles
- Toilets for differently abled and special needs
- Urinals
- Bathing Area
- Washing Area
- Waiting Area
- Staff / Caretaker room
- Store Room

Infrastructure



The basic infrastructure should have the following systems incorporated in the toilet-

Water supply and storage arrangements

- Plumbing
- Wastewater management
- Storm water drainage
- Electricity and lighting

BASF INDIA LIMITED

01

WHAT



What was the case?

- A project on Sanitation and Water (WASH) in and around its key sites – Dahej, Mangalore and Chennai.
- Supporting the call for eliminating the practice of open defecation and also constructing toilets for girls in schools to support girl's education programmes.

Why was this initiative taken?

- To tackle issues related to resource conservation and education
- Water has been a key theme for BASF's CSR projects and with the current focus on Swacchh Bharat, Sanitation has also been included in the project for 2014-15.

02

WHY



03

STEPS TAKEN



What steps were taken?

- Construction of community toilets
- Dustbins
- E-rickshaw for waste collection
- Awareness wash programme
- Water purification units (Reverse Osmosis Technology)
- Rainwater harvesting systems
- Waterless toilets (DRDO Bio Toilets)

What were the inferences?

- DRDO Bio-toilet
- Availability of clean drinking water
- Can introduce new systems of waste disposal & management
- Prioritize your focus points so that it becomes easy to work in consortium
- The design and the selection of material should be such that it becomes easy to maintain it

04

INFERENCES



LOCAL

A public toilet as defined by the Municipal Corporation of Delhi

Public Toilets are toilets which are provided for the floating population/ general public in places such as markets, train stations, tourist places, near office complexes, or other public areas where there are a considerable number of people passing by. PTs are to be accessible to one and all and well-connected to important areas and pedestrian junctions.



Guidelines for the Necessary Facilities in all Community and public toilet

The MCD as well as NDMC shall ensure construction of public toilets/urinals while keeping a certain guideline in mind. The guidelines need to be strictly followed while building a public toilet.

Cleanliness

- All toilet seats, urinals and wash basins must be clean and usable at all times.
- Toilet floor is neat and clean, swept and mopped always.
- Mirrors, if available, are clean and polished.
- Litter bins are available and cleaned regularly for each toilet seat.
- Cleaning and maintenance roster must be maintained on regular basis.



Support Infrastructure

- Availability of water for cleaning and usage purposes.
- Soap or soap Dispensers must be available and operational.
- Adequate ventilation available (vents, slanted glass slats or exhaust fan).
- Premises must be well lit, with each seat having its own light point which are functional.
- All doors must have bolt mechanism installed which are functional.

Accessibility

- Entrances must be gender-segregated, i.e. distinct entrances for males and females.
- Accessibility entrance (like ramp, stairs) for access to the specially abled persons.
- Toilets must have visible signage showing that the facility is available for use within 3 meters of the toilet.
- Public/Community Toilet is visible on Google Maps toilet locator.



Maintenance

- Security and maintenance services should be available on a daily basis.
- Water must be always available for flushing and washing.
- The W.C., the toilet floor area and the surroundings should be kept clean and dry.
- Proper drainage is to be maintained and no accumulation of water, liquid etc. is to be allowed at any time.
- The lighting arrangement at the PTUs is functional at all times. Electrical safety is to be ensured for users.
- Broken floor and wall tiles are to be replaced within 3 days of such event.

SANJAY COLONY

01

WHAT



What was the case?

- It is a Slum area in Okhla Phase 2 and population is about 40K.
- Has 2 Community Complex Toilets for both male and female but its not well maintained
- Females had to go to the forests in early morning otherwise males wonder there for sexual harassment, even one case of gang rape is reported.

Why was this initiative taken?

- To educate people on 'how to use the toilet' and the consequences of communicable diseases especially urinary tract and reproductive tract infections.
- For women had to provide safety from sexual harassments and proper hygiene

02

WHY



03

STEPS TAKEN



What steps were taken?

- The officials from the Slum and JJ Department, MCD,53 said that the norm in slum areas is 1 latrine seat for 150 people and a 20-20 CTC. (The 20-20 CTC means a toilet complex which has 20 latrine seats for men and 20 latrine seats for women) for a plot meant for 500 households.

What were the inferences?

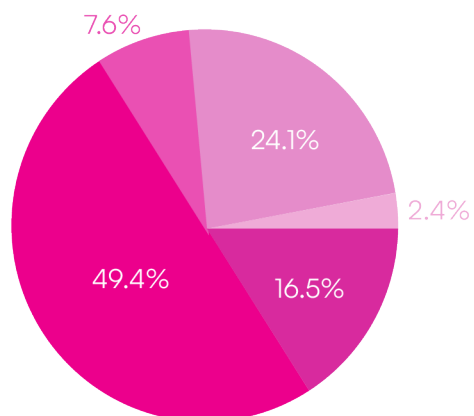
- Govt keeps passing jobs to their representatives and never try to solve it timely.
- There is a political reason why the MLAs have not been responding to the needs of a public toilet.
- All have a wrong mindset of why there is even need of a toilet

04

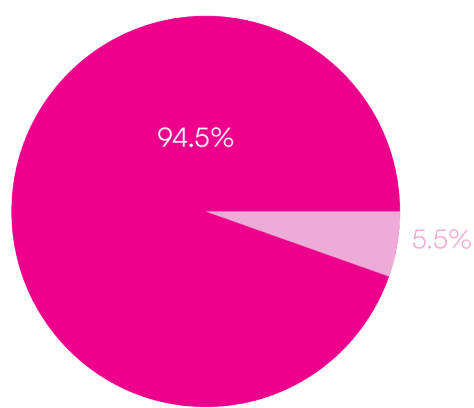
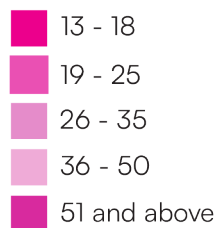
INFERENCES



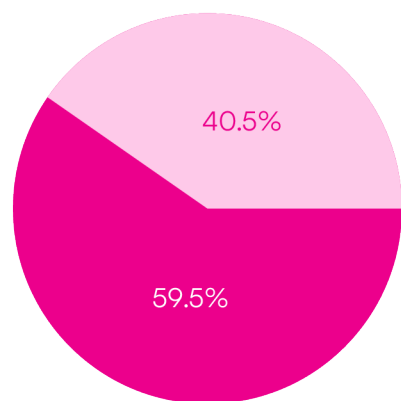
SURVEY



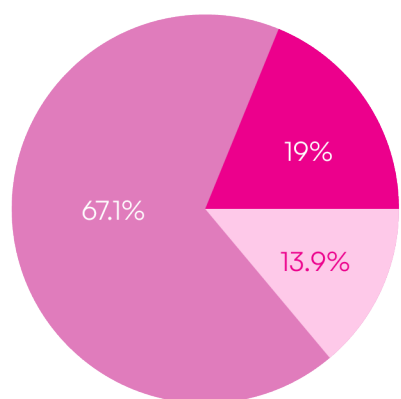
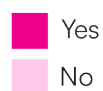
AGE OF THE USER



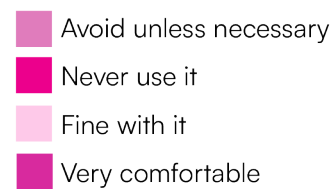
GENDER

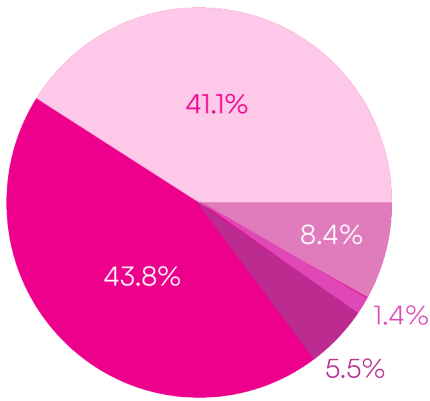


ARE YOU AWARE OF PINK TOILETS?



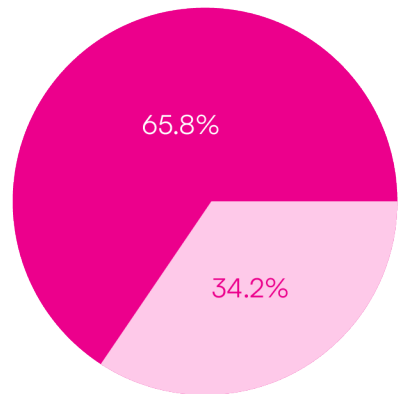
ARE YOU COMFORTABLE USING PUBLIC TOILETS?





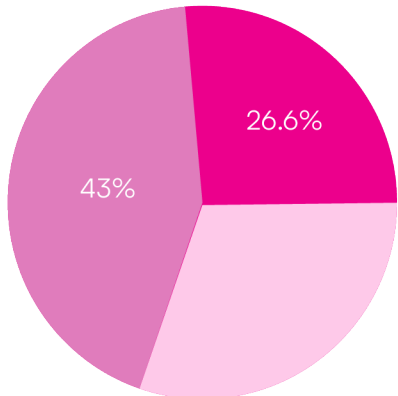
HOW FREQUENTLY DO YOU USE A PUBLIC TOILET?

- Daily
- Once/twice a week
- Once/twice a month
- Once/twice in 3-4 months
- Never



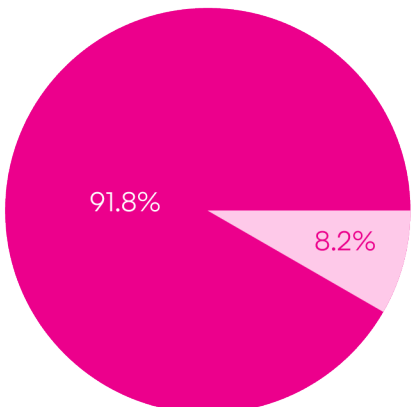
WHICH OF THE FOLLOWING DO YOU PREFER?

- Indian Wc
- Western Wc



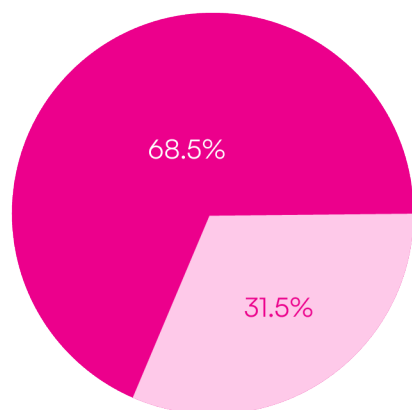
DO YOU KNOW HOW TO USE A SANITARY PAD INCINERATOR?

- Yes but I don't use it
- Yes
- No



DO YOU FEEL SAFE USING A PUBLIC TOILET?

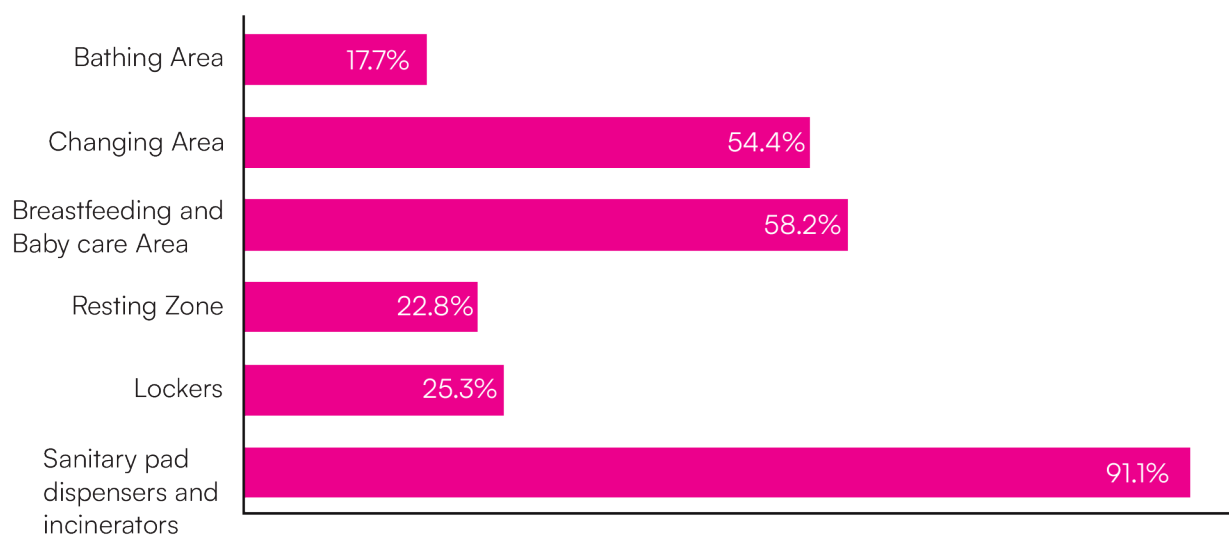
- No
- Yes



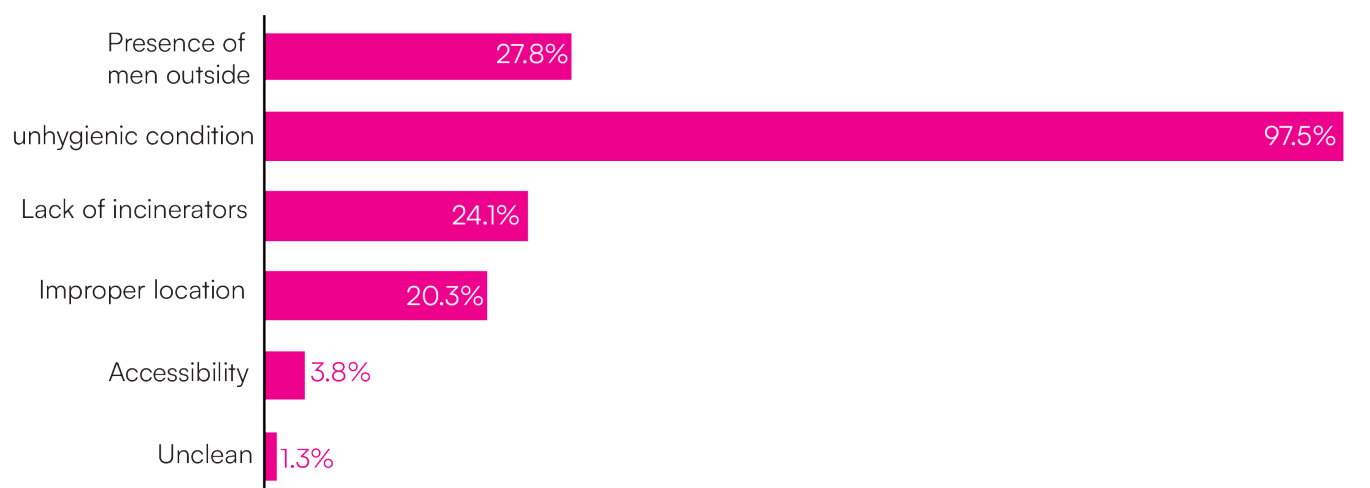
DO YOU FEEL WELCOMED IN THE PUBLIC WASHROOMS?



WHAT FACILITIES ARE NECESSARY IN A WOMEN'S WASHROOM ACCORDING TO YOU?



WHAT ISSUES PREVENT YOU FROM USING A PUBLIC GOVERNMENT WASHROOM?



MATERIAL AND FINISHES

FLOORING OPTIONS

TYPES OF FLOORING					
	NON POROUS	DURABLE (HIGH FOOTFALL)	EASY TO CLEAN AND MAINTAIN	EASY TO INSTALL AND REPAIR	COST EFFECTIVE
CERAMIC TILES	✓	✓	✓	✓	✓
VITRIFIED TILES	✓	✓	✓	✓	✓
KOTA STONE	✓	✓	✓	✓	✓
PORCELAIN TILES	✓	✓	✓		✓
VINYL	✓	✓	✓		✓
CONCRETE		✓	✓	✓	✓

MATERIALS FOR DOOR				
	DURABLE	MOISTURE RESISTANT	EASY TO CLEAN AND MAINTAIN	ECONOMICAL
PVC DOORS	✓	✓	✓	✓
FIBREGLASS	✓	✓	✓	✓
PLYWOOD	✓		✓	✓
STAINLESS STEEL	✓	✓		
ALUMINIUM	✓	✓		

MATERIALS FOR DOOR				
	DURABLE	MOISTURE RESISTANT	EASY TO CLEAN AND MAINTAIN	ECONOMICAL
PVC DOORS	✓	✓	✓	✓
FIBREGLASS	✓	✓	✓	✓
PLYWOOD	✓		✓	✓
STAINLESS STEEL	✓	✓		
ALUMINIUM	✓	✓		

PARTITION WALLS				
	DURABLE	MINIMUM WIDTH	STRONG	ECONOMICAL
FRP	✓	✓	✓	✓
PLASTIC (LAMINATE/SOLID)	✓	✓	✓	✓
POWDER COATED STEEL	✓	✓	✓	✓
METAL	✓		✓	
CONCRETE	✓		✓	✓
PHENOLIC CORE	✓			✓
STAINLESS STEEL	✓	✓	✓	
BRICK WALLS	✓		✓	✓

TYPES OF SEATING				
	DURABILITY	EASY TO MAINTAIN	CONDUCTIVITY	EASY TO CLEAN
CONCRETE	✓	✓	✓	
METAL	✓		✓	✓
WOOD	✓	✓		
PLASTIC		✓		✓
WPC	✓			✓

TYPES OF STORAGE					
	DURABILITY	EASY TO CLEAN	PESTS	EASY TO MAINTAIN	WATER RESISTANT
ALUMINIUM	✓	✓		✓	✓
STEEL	✓			✓	✓
MILD STEEL- POWDER COATING	✓			✓	✓
WOOD	✓		✓		

TYPES OF WALL TILES					
	DURABLE	EASY TO CLEAN	MOISTURE RESISTANT	SCRATCH AND STAIN FREE	COST EFFECTIVE
CERAMIC TILES	✓	✓	✓	✓	✓
PORCELAIN TILES	✓	✓	✓	✓	✓
VINYL TILES	✓	✓	✓	✓	✓
VITRIFIED TILES	✓	✓	✓	✓	✓
PVC PANELLING	✓	✓	✓	✓	✓
MARBLE	✓	✓		✓	
GLASS TILES (MOSAIC)	✓	✓	✓	✓	
TERRAZZO TILES	✓	✓	✓	✓	

TYPES OF WASHBASINS				
	DURABILITY	EASY TO MAINTAIN	POROUS	EASY TO CLEAN
GRANITE	✓			✓
CERAMIC	✓	✓		✓
MARBLE	✓	✓		
CONCRETE	✓	✓	✓	

TYPES OF WINDOWS				
	DURABILITY	EASY TO MAINTAIN	MOST VENTILATION	EASY TO CLEAN
SKYLIGHT WINDOWS	✓		✓	✓
SHUTTER/LOUVERED WINDOWS	✓		✓	✓
TRANSOM WINDOW	✓	✓		
HOPPER WINDOW		✓		

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